European Commission

Determining labour shortages and the need for labour migration from third countries in the EU

Synthesis Report for the EMN Focussed Study 2015

Based on the National Contributions from 25 Member States: Austria, Belgium, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, United Kingdom.

Migration & Home Affairs

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EXPLANATORY NOTE

The Synthesis Report was prepared on the basis of National Contributions from 25 EMN NCPs (Austria, Belgium, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, United Kingdom) according to a Common Template developed by the EMN and followed by EMN NCPs to ensure, to the extent possible, comparability.

National contributions were based on desk analysis of existing legislation and policy documents, reports, academic literature, internet resources and reports as well as information collected from national authorities. Statistics were sourced from national authorities and other (national) databases. The listing of Member States in the Synthesis Report results from the availability of information provided by the EMN NCPs in the National Contributions.

It is important to note that the information contained in this Report refers to the situation in the above-mentioned Member States up to and including 2015 and specifically the contributions from their EMN National Contact Points. More detailed information on the topics addressed here may be found in the available National Contributions on the EMN web-site and it is strongly recommended that these are consulted as well.

EMN NCPs from other Member States could not, for various reasons, participate on this occasion in this Study, but have done so for other EMN activities and reports.

Executive summary

KEY POINTS TO NOTE:

Shortages of workers with relevant qualifications have become a major challenge affecting European competitiveness. In the context of rapid technological change, Europe's declining population and ageing workforce mean that labour shortages are expected to increase in the future.

The present study analyses (i) the role of labour migration in efforts to overcome labour shortages; (ii) the variety of instruments used to identify and monitory labour shortages at EU and national level (such as employer surveys, forecasts and qualitative studies), and (iii) the extent to which these instruments are used in designing labour migration policy at national level.

So far, efforts at Union-level to attract (skilled) workers from third countries have had a limited impact, in part because of the recent nature of several EU legislative instruments (e.g. Directives on seasonal workers, ICTs and students and researchers) but also because of the limited application of the EU's Blue Card Directive. Furthermore, whilst a number of instruments are in place at EU-level to identify and forecast labour shortages across Member States, such as skills forecasts, employer surveys and ad-hoc studies, these instruments do not specifically consider whether migration can be used to satisfy labour shortages.

Most Member States view migration as part of a wider strategy to address labour shortages. However, they differ in the relative importance that they give to labour migration in comparison to other measures, such as market activation of the current resident population and reforming education and training opportunities. Furthermore, concerns about competition with local workers are voiced in public and policy debates at national level, and may act as a barrier for Member States to take an active role in managing labour migration on an economic basis.

Two approaches have been identified to linking economic migration to labour market shortages: a supply-centred *'human capital'* approach, where admission frameworks are adjusted in order to attract migrants with characteristics that will place them in a favourable position for labour market insertion; and a demand-centred approach, that involves granting accelerated or simplified admission to migrants seeking employment in previously identified shortage occupations. In practice, the two models often interact.

In countries where the human capital model has been adopted facilitating highly-skilled labour migration is not seen as a tool for addressing labour shortages but rather as an instrument for encouraging innovation and the move toward a 'knowledge economy'. This is the case in the Netherlands, for instance, where attracting and granting entry to highly-skilled migrants from third-countries is a key policy priority, without migration policy referring to particular shortage occupations.

In line with the demand driven model, which aims at satisfying demand for particular occupations, Member States have adopted a variety of policy measures to adjust/modify their labour migration policies in light of labour market shortages. These include exemptions from labour market tests (AT, BE, CY, DE, EE, ES, FI, FR, HR, IE, PL); exemptions from quotas (HR, IT); access to a points-based system (AT); reduced minimum income threshold requirements (EE, EL, IE, LV, NL, UK); facilitating access to certain groups already in the country, such as students (DE, LT, FR) and asylum seekers (SE); and more favourable conditions for family reunification (e.g. IE).

In most Member States, stakeholders are involved in the process of formulating labour migration policy or in adjusting it to help address labour market needs. The involvement of stakeholders may take place in formal consultative structures or on an ad hoc basis.

Identifying labour market shortages is a practice that is common to the vast majority of Member States and a wide range of methodologies are used, including taking stock of the number of unfilled vacancies, surveys, sector analysis and qualitative studies. The vast majority of Member States identify current shortages, while forecasting future labour shortages is used to a lesser extent.

Member States differ in their definition of labour shortages, for example: this may take into account sectors or occupation/professional groups, qualification and/or skill levels, the employment type, the duration and the severity of the shortage. Moreover, the analysis can be at the national or sub-national level, and can distinguish by frequency, time-frame and causes.

Shortage occupation lists are produced in twenty-one Member States. A number of stakeholders can be involved in the drafting of the shortage lists, and include social partners, different ministries, state agencies and possibly other multi-partite organisations and labour or migration experts.

With regard to the use of shortage lists, three typologies can be identified. In eight Member States that identify shortage professions in specific lists, these are not used in the design of labour migration policies, but rather to put forward activation measures.

Two Member States do not develop shortage lists with the explicit purpose of determining labour migration, but make use of such lists for some specific aspects of their migration policy. Finally, ten Member States develop shortage lists as an explicit instrument for determining the admission of third countries workers.

Most Member States monitor labour migration in general; however, only a few monitor the impact of migration on shortage occupations, and some do so only to a limited extent or on an ad-hoc basis. Only five Member States reported to have comprehensive measures in place to assess the impact of migration on labour shortages. The monitoring of intra-EU mobility of EU nationals is very limited and no Member State appears to monitor the mobility of third country nationals at all.

What did the study aim to do?

The EU **labour market** is expected to face important **future challenges**. These will be both of a quantitative and of a qualitative nature: the ageing population will affect the quantity of the labour supply and rapid technological changes and the increasing demand for certain skills will affect the categories of professions and occupations required on the labour market.
To promptly respond to such challenges, it is particularly important to anticipate needs by carrying out labour market analyses, aimed at determining shortages and at monitoring labour market developments. On the basis of such analyses, **managing labour migration,** according to the economic needs, is a way to respond to such challenges.

The aim of the study is to analyse how Member States employ **labour migration to address the identified labour shortages.** The study provides an overview of the instruments in place in Member States to determine labour shortages, to quantify the needs for labour migration and to assess the impact of labour migration on national labour markets. To this end, it includes the full spectrum of skills.

More specifically, the study aims to:

- Provide an overview of EU labour migration policy and law (Section 2);
- Provide an overview of EU instruments and studies for forecasting labour shortages and the need of labour migration (Section 3);
- Provide an overview of national labour migration policy and recent debates on labour migration (Section 4);
- Provide an overview of instruments to identify labour shortages and for anticipating the need for labour migration (Section 5);
- Provide an overview of instruments to monitor the outcome of labour migration on shortage occupations (Section 6).

What is the scale and nature of unfilled vacancies in the EU?

Twelve Member States provided statistics in the context of this study on **unfilled vacancies** across six preselected sectors (teaching, ICT, skilled agricultural, forestry and fishery, personal service, personal care and health). Comparisons between Member States on the basis of these statistics should be treated with caution, since the statistics were provided for different years and were collected on the basis of different methodologies. Nevertheless, the statistics suggest that the scale of unfilled vacancies in the EU is significant, even considering only six pre-selected sectors (see Table 1 in Section 1.3 of the Synthesis Report). Furthermore, highly-skilled occupations are not the only ones experiencing labour shortages – medium-skilled and low-skilled occupations, including home-based personal care workers, cooks, waiters and cleaners, are also in demand.

Most of the eight Member States that provided statistics on Top 15 professionals included in LSOs report medium-skilled professions as the top three professions in shortage lists (Table 1 below, which summarises the information collected in Annex 4 of the Synthesis Report).

Table 1: Top three shortage professions (based on ISCO-08 occupations)

MS	Year	1	2	3
AT	2015	Metal working machine tool setters and operators – Metal turners	(Asphalt) Roofers	Metal working machine tool setters and operators – Milling machinists
HR	2015	Livestock farm labourer	Field crop and vegetable growers	Fitness and recreation instructors and program leaders
CZ	2014	Crop farm labourers	Heavy truck and lorry drivers	Security guards
EE	2013	Drivers and mobile plant operators	Business and administration associate professionals	Production and specialized services manager
FI	2014	Contact centre salespersons	Specialist medical practitioners	Dentists
HU	2014	Mining and Quarrying Labourers	Assemblers	Mechanical Machinery Assemblers
LV	2014	Software developers	Information and communications technology operations technicians	Film, stage and related directors and producers
PT	2014	Sewing machine operators	Waiters	Commercial sales representatives

What is the EU legislative framework regarding labour migration? And which instruments are in place at EU level to analyse labour shortages?

Currently, four **Directives** are in force to regulate labour migration; however, the impact of the directives is considered to be limited, either because the directives have been adopted very recently (Seasonal Workers Directive (2014/36/EU) and Intra-Corporate Transferees Directive (2014/66/EU) both adopted in 2014), or because problems have been identified in relation to their implementation (Blue Card Directive (2009/50/EC), Researchers Directive (2005/71/EC)).

A number of instruments have been developed at the

EU level to **monitor and forecast labour shortages** across Member States, for instance the European Employment Observatory, the European Vacancy Monitor, EU Skills Panorama, and the EU Labour Force Survey. However, these instruments rely on the aggregation of data provided by national bodies. The instruments also do not specifically consider whether migration can be used to satisfy labour shortages.

The European Centre for the Development of Vocational Training (Cedefop) publishes forecasts of both the labour demand and supply side, and coordinates the Skillsnet network. Besides Cedefop's publications, there are other periodic reports published by the Commission, such as the "European Vacancy and Recruitment Report", the "Report on Mapping and analysing the bottleneck vacancies in EU labour markets", the "Eurostat Vacancy Survey". A number of ad hoc studies are also available.

Is there a typology of labour migration policy across Member States?

Most Member States participating in the study view **migration as a potential source of labour**, however their approaches differ in two respects: in the instruments they use to facilitate the matching of migrants to shortage occupations, and in the relative importance of migration compared to other labour activation strategies.

Some countries do not play an active role in trying to match migrants to pre-defined shortage occupations, preferring to leave the admission of labour migrants to labour market forces, in particular, to individual employers. A clear example of this approach is Sweden, where employers have the right to recruit third-country nationals to fill vacancies if they cannot find suitable Swedish or European Union (EU) workers.

However, most countries do endeavour to match the supply of foreign labour with labour demand, although sometimes the efforts are limited to trying to attract specific sub-groups of workers (e.g. seasonal workers).

Some Member States have designed specific policies to attract highly skilled migrants; however, these policies are often not seen as a strategy to address labour shortages, but rather as part of a strategy for increasing competitiveness, to encourage innovation and the move towards a more 'knowledge-based' economy.

In most Member States, the **public debate** over labour migration involves a plurality of stakeholders. Generally, concerns are voiced about competition between labour migrants and the local workforce, and about the difficulties involved in estimating the labour demand.

Which instruments are in place to detect labour shortages in Member States?

Whilst most Member States have systems in place to monitor current labour shortages, only eleven endeavour to forecast future shortages.

Most countries do not have a legal **definition of 'shortage'**; however, in practice shortages are mainly defined in terms of sectors or occupation/professional groups, and/or by qualification and/or skill levels. Some countries include also the employment type in the definition (e.g. seasonal), the shortage duration and the degree of severity of the shortage. The shortage can be analysed at the national level (this is the case for eight Member States), or it can include the regional and sub-regional level (this is the case for eleven Member States). Other characteristics that may be taken into account to define labour shortages are the time frame (whether shortages are long- or short-term), the frequency (whether they are cyclical or structural) and the causes.

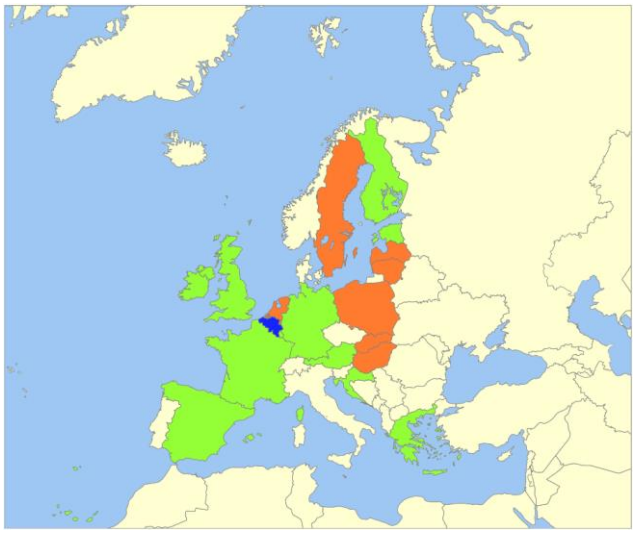
To measure labour shortages, Member States employ different **methodologies**, which could be used jointly or in isolation. In most cases, however, they are not geared at forecasting future needs:

- Some Member States take stock of the number of vacancies that stay unfilled after a period of official registration at PES.
- Most Member States survey employers on their recruitment needs, by phone interviews or by written questionnaires, and employ different sampling methods.
- Also sector analyses are widely carried out, although in most countries they do not serve the purpose of determining migration needs.
- Forecast analysis is carried out in nineteen Member States to anticipate labour migration needs.
- Finally, qualitative studies are also employed in a number of countries.

Following the identification of labour shortages, most Member States draft **shortage lists**. The frequency with which the lists are updated varies from every three months to every three years. The lists try to take into account both supply and demand side considerations.

As indicated in Figure 1 below, Member States make different use of shortage lists. Some compile shortage occupation lists but do not link them to labour migration (in orange in the map); some develop shortages lists for purposes other than labour migration, but use them to develop some aspects of their labour migration policy (in blue in the map); finally, some Member States develop shortage lists with the explicit purpose of determining the admission of labour migrants (green in the map).

Figure 1: The use of shortage lists in Member States in relation to labour migration



Most Member States involve a variety of **stakeholders** in the process of identifying labour shortages, either through formal consultative structures, or on an ad-hoc basis. Stakeholders always include social partners; however, other multi-partite organisations and labour and migration experts can also be involved.

With regard to the **challenges** of forecasting labour shortages, most countries highlighted methodological difficulties in forecasting the development of the labour market.

To what extent are shortage lists used to determine labour migration?

Most Member States have established a more favourable regulatory framework for labour migrants applying to work in a profession listed as a shortage occupation. Exemptions from the labour market test or from the quota regime are commonly envisaged; the salary threshold that these workers have to meet is also often lower than for the other professions.

Labour migrants applying to work in shortage occupations are more likely to be admitted in certain Member States because they are able to earn more points (in cases where points-based selection is in place), or because bi-lateral agreements for recruitment of workers in specific occupations have been adopted with third-countries.

Certain Member States make access to the labour market easier for non-economic migrants (students, refugees, tolerated persons) if the occupations concerned are on a shortage list. Other rights are also sometimes granted to migrants in shortage occupations, such as immediate family reunification or temporary regularisations.

To what extent is the outcome of labour migration monitored in relation to labour shortages?

Only a few Member States monitor the impact of labour migration on shortages occupations.

Nine Member States do not monitor this systematically, however, some monitor the impact on an ad-hoc basis, e.g. for particular skills or policy measures. Some countries monitor the impact of labour migration only on particular categories of shortage professions. Only five Member States monitor the impact of labour migration on shortages on a regular basis, in some cases as part of a formalised process to design migration policy.

While statistics are collected at Member State level on the intra-EU mobility of EU workers, these statistics do not specifically focus on the mobility of EU workers in those parts of the labour market affected by shortages. In most Member States no tools are in place to monitor the intra-EU mobility of third-country national workers.

1 Introduction

1.1 STUDY RATIONALE AND AIMS

Several important **challenges affect Europe's future labour market**, including an ageing society; rapid technological changes and development; increasing demand for certain categories of labour; and uncertainty about future growth in European economies in a number of sectors and occupations.[1] Identifying and addressing labour market shortages is a key policy tool in overcoming the expected challenges.

Shortages occur on the labour market when demand for a particular type of labour exceeds the available supply at prevailing pay and working conditions of employment. Shortages emerge as a result of the lack of workers available or interest in accepting a job at the current conditions (labour shortages) and the lack of workers with the relevant skills (skill shortages).[2]

Two different types of labour shortages can be identified: cyclical and structural shortages. Skills mismatches will always exist as a part of the frictional dynamics of the labour market and due to the business cycles (i.e. **cyclical labour shortages**). However, persistent or **structural shortages** can be detrimental to economic recovery and growth. Some structural changes, such as the adoption of new technologies, may increase the demand for certain skills that are not available in the labour market in the short run, creating skills shortages even when unemployment is high. Therefore, one of the main challenges faced by policy makers is identifying real, structural labour shortages, which cannot be met by the local labour force even if the labour market is functioning well or measures are taken to improve it, e.g. by supporting labour matching or by investing in education and training.

While migration from third-countries is not necessarily a panacea for the economic problems in Europe, it is seen as part of the response to labour market needs and identified shortages. Labour and skills shortages are frequently cited by policymakers and employers as amongst the main reasons for **attracting foreign labour**.[3] The ability to attract skills and talent and to recruit from abroad when necessary can be a key driver for future growth, competitiveness and innovation of European economies.

Access to information and analysis on the functioning of the labour market is crucial in order to develop relevant policy measures. Examining and assessing the extent of labour shortages is key to developing a targeted labour migration policy. Instruments used for identifying current and future skills shortages and for anticipating the need for migrant labour can include (a combination of) employers' needs analysis, labour market needs analysis, employer surveys forecasts and foresights, qualitative studies, etc. The results can be used to produce lists of shortage occupations.

The aim of this focussed study is to provide an overview of the instruments in place in Member States to identify labour shortages and to quantify the needs for migrant labour from third countries. The study will also assess how the impact of labour migration on national labour markets is monitored and what kind of instruments are used to that end. The study does not explicitly cover instruments used to assess the emigration of workers from a Member State to third countries, which may contribute to labour shortages or reduce labour surpluses.

The study includes in its scope all skill and qualification levels of third-country nationals and is not limited to highly- or medium-skilled third-country nationals.

More specifically, the study aims to:

- Provide a brief overview of EU labour migration policy and law;
- List recent EU instruments and studies for forecasting labour market shortages and the need for labour migration;
- Provide an overview of national labour migration policy and recent public and policy debates on labour migration;
- Analyse whether there is a link between identified labour shortages and labour migration policy;
- Provide an overview of instruments for identifying labour and skills shortages and for anticipating the need for migrant labour;
- Examine how lists of shortage occupations are defined and classified as well as whether Member States make distinctions between different types of shortages (e.g. short-term (current) vs. longer-term shortages; temporary vs. permanent shortages);
- Explore the role of social partners and other stakeholders and whether there are any formal mechanisms to consult/involve social partners in determining labour shortages and the anticipated need for migrant labour;
- Compare across Member States how the impact of labour migration on shortage occupations is monitored;
- Provide statistics on the number of workers employed by selected occupations, residence permits issued to third-country nationals and estimated unfilled vacancies of the top shortage occupations and occupations included in the shortage lists.

[1] "Mapping and analysing the bottleneck vacancies in EU labour markets" (September 2014) commissioned by the European Commission, Available at: ec.europa.eu/social/BlobServlet?docId=12625&langId=en

[2] IOM (2012), Labour shortages and migration policy', available at this link: ec.europa.eu/social/BlobServlet?docId=9928&langId=en

[2] http://ec.europa.eu/social/main.jsp?catId=113

[3] Communication from the European Commission: "Europe 2020: A Strategy for smart, sustainable and inclusive growth' COM (2010)2020 final

1.2 STRUCTURE OF THE REPORT

Section 1.3 below provides an overview of unfilled vacancies and shortage occupations on the basis of the statistics compiled in Annex 3 and Annex 4 and further data provided in the National Reports. **Section 2** outlines the EU policy and legislative measures in the field of labour migration. **Section 3** identifies the EU level instruments for forecasting labour market shortages, highlighting those in particular which focus on migration. **Section 4** presents an overview of national labour migration policies and recent public and policy debates on labour migration in light of labour shortages. **Section 5** further looks into instruments used for identifying current and future labour and skills shortages and for anticipating the need for labour migration. **Section 6** examines the ways in which Member States monitor the impact of labour migration on shortage occupations. A Glossary of terms is provided in **Annex 1**; **Annex 2** provides a detailed overview of the instruments used by Member States to identify labour shortages, while **Annexes 3** and **4** are statistical annexes, focusing, respectively, on: the number of workers employed by specific occupations (distinguishing between national, EU and third-country nationals) and estimated unfilled vacancies (Annex 3); and the top professions included in shortage occupation lists (Annex 4).

1.3 STATISTICAL OVERVIEW OF SHORTAGE OCCUPATIONS

Member States were asked to provide statistics for the latest available year on the number of workers employed (by national, EU citizens and third-country nationals), the number of residence permits issued and the number of unfilled vacancies in six pre-selected occupational groups at ISCO-08 (2 digit level): health professionals (22); personal care workers (53); personal services workers (51); skilled agriculture, forestry and fishery workers (61); information and communication technology professionals (25) and teaching professionals (23).[4] Twenty one Member States provided statistics on the number of workers employed[5] and twelve Member States provided statistics on unfilled vacancies across the six pre-selected groups of sectors.[6]

Comparisons across countries should be treated with caution since Member States provided statistics for different years (2011, 2012, 2013 and 2014).[7]

However, on the basis of the statistics collected, a number of tentative observations across Member States can be made about (i) the scale of unfilled across the EU; and (ii) the types of occupations where shortages are most apparent.

Firstly, the **scale of unfilled vacancies** in the EU during the 2011-2014 reference period was significant. This is apparent even if only the six pre-selected occupations listed in Table 2 and Annex 3 are examined. It should be noted that Member States use different methodologies for determining the number of unfilled vacancies and thus, statistics should be treated with caution.[8] In **Austria**, **Poland** and **the United Kingdom** this is determined by a job vacancy survey of a sample of employers, while in the **Czech Republic**, **Estonia**, **France, Hungary, Slovak Republic** these are the vacancies registered by PES in their systems. Due to these different methodologies, measuring unfilled vacancies in some countries could be more representative of the staff turnover in particular occupations rather than an indication of labour shortages.

As shown in table 2, the highest number of unfilled vacancies in the Member States which provided statistics was observed in personal care sector in the **United Kingdom** in 2013 (approx. 77,000) and also in **France** in 2012 (aprox.19,000) and **Belgium** in 2013 (approx. 7,500). A high number of unfilled vacancies in personal services occupations, such as cooks, waiters and cleaners, were reported in the **United Kingdom** in 2013 (approx.43,000), **France** in 2012 (approx. 34,000) and **Belgium** in 2013 (over 7,000). Unfilled vacancies were registered in the remaining sectors to a lesser degree.

Table 2: Unfilled vacancies in six selected sectors

	Year	Health	Personal Care	Personal Service	Agricult. Forestry and Fishery	ICT	Teaching
AT	2013	233	409	3,563	138	384	188
BE	2013	7,339	3,949	7,418	N/a	7,511	15,014
CZ	2011	754	53	2,091	175	882	538
EE	2014	523	608	3,907	473	143	702
FR	2012	2,301	18,997	34,125	2,108	3,957	5,054
HU	2014	104	609	4,365	3,185	310	357
LV	2014	251	434	1,457	463	194	380
LT	2014	28	18	194	0	10	29
PL	2014	1,716	7	679	54	1,452	536
PT	2014	431	1,097	5,725	2,343	368	698
SK	2014	112	67	588	28	42	79
UK	2014	17,844	76,972	43,145	6,252	23,300	20,566

Source: National Reports to this study

[4] The six groups of occupations were selected on the basis of the occupations that most frequently featured in Member States' shortage occupation lists identified in the recent EMN Inform "Approaches and tools used by Member States to identify labour market needs" (2013). Available at http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/european_migration_network/reports/docs/emn-studies/emn-informs/emn_inform_on_labour_market_tests_5dec2013_final.pdf

[5] AT, BE, CZ, DE, EE, HR, FI, FR, HU, IE, LV, LT, LU, MT, NL, PL, PT, SE, SI, SK, UK. SK provided estimates.

[6] AT, BE, CZ, EE, FR, HU, LV, LT, PL, PT, SK, UK

[7] The majority of Member States provides statistics for 2014 while AT provided for 2013, FR for 2012 (only for employment; 2014 for unfilled vacancies) and CZ and EE (only for employment 2014 for residence permits and unfiled vacancies) for 2011.

[8] For more information on the methodologies used, consult the individual national reports.

Secondly, table 3 provides an overview of the top professions included in lists of shortage occupations, classified either by ISCO-08 or equivalent national classifications (*see also Annex 4 for more details*). The table highlights the disparate labour market needs of the different Member States, even in terms of the level of skills required. These range from highly qualified workers as in **Belgium**, Brussels region (teacher secondary education), **Latvia** (software developers), **Ireland** (ICT specialists) and **UK** (production managers in mining and energy) to professions requiring lower level of qualifications such as cleaners in **Belgium** (Flanders) and mining labourers in **Hungary**.

Table 3: Top professions included in shortage lists

MS	Professional level
Top Professions included in lists of shortage occupations by country (ISCO-08)	
AT	Metal working machine tool setters and operators – Metal turners (7223)
HR	Livestock farm labourers (9212)
CZ	Crop farm labourers (9211)
EE	Drivers and mobile plant operators (83)
FI	Contact centre salespersons (5244)
HU	Mining and Quarrying Labourers(9311)
LV	Software developers (2512)
PT	Market oriented crop and animal producers (233)
Top Professions included in lists of shortage occupations by country (Equivalent national classification)	
BE	Cleaner (Flanders)
BE	Teacher secondary education (Brussels)
BE	Electrician installer (Wallonia)
HR	Shepherds, herders
EL	Fishermen
HU	Mining Laborers
LV	Electrical and electronic trades
LT	Drivers of international freight vehicles
MT	Child care workers
NL	Mechanic/Service Technician
PL	Building caretakers
SE	Mining and metallurgical technicians
SI	Drivers of heavy lorries and Tractor units
UK	Production managers and directors in mining and energy

Source: National Reports to this study

Further evidence of the disparate labour market requirements of individual Member States can be found in the National reports, as outlined in the remainder of this section.

Most of the shortage occupations in **Austria** between 2012 and 2015 were workers in trades and crafts (ISCO main occupation group 7), while a few technical occupations (ISCO-08 main occupation group 3) and university-level professions (ISCO-08 main occupation group 2) were listed as well. **Cyprus** identified a long-term labour shortage in the agricultural sector for unskilled positions. In **Finland**, recruitment problems in 2013 most commonly occurred in the social and health care sector, the transport and construction sectors and with regard to warehouse workers. **France** noted labour market shortages particularly in the IT and construction sectors[9]. In **Ireland** in 2014, there was an increase in difficult to fill vacancies; three quarters of all difficult to fill vacancy mentions were for professional occupations (IT, engineering and health).[10] **Lithuania** identified shortage occupations for the first half of 2015 were highlighted for both industry (welder, ship hull assembler, tailor) and services (cook and driver of international freight vehicles). In the **Netherlands**, based on statistics for February 2015, labour market shortages were noted in technical occupations, gardeners and some medical technical operations. In **Poland**, in 2014 the professions with the highest shortage indicators identified by the Ministry of Labour and Social Policy were service and sales workers and clerical support workers, followed by occupations from major group craft and related trade workers In the **United Kingdom**, the 2013 shortage occupation list focused on the health sector and engineering-related occupations.

2 Overview of EU labour migration policy and law

The European Agenda on Migration published on 13th May 2015[11] endeavours to build up a coherent and comprehensive approach to reap the benefits and address the challenges in the European Union deriving from migration. The Agenda identifies a set of long-term demographic and economic challenges and explicitly acknowledges the importance of attracting third country workers with the required skills as a policy avenue to address these challenges. The main short and medium-term policy priorities in the field of legal migration are reviewing the EU Blue Card scheme to make it more effective in attracting talent to Europe and making greater efforts to improve job and skills matching through better identification of skill gaps.

The EU's approach to labour migration has so far been implemented through individual Directives focusing on the conditions of residence and entry of specific categories of third country workers, including highly-skilled workers, seasonal workers, intra-corporate transferees (ICTs) and students and researchers. Some commentators have suggested that this has resulted in a highly fragmented legal framework for labour migrants from third countries.[12]

[9] In the civil engineering sector, eight priority occupations were identified by the competent occupational branch: miscellaneous road and network worker, construction equipment driver/operator, road builder, paver, civil engineering constructor, electrical network fitter, pipelayer and site manager

[10] McNaboe, J., Condon, N., Milicevic, I., Hogan, A. and Wowczko, I (2015). *Vacancy Overview 2014*. A Report by the Skills and Labour Market Research Unit in SOLAS for the Expert Group on Future Skills Needs. Available at www.skillsireland.ie

[11] Communication on a European Agenda on Migration, 2015, COM(2015) 240 final.

[12] For example Lucie Cerna (2013), 'The EU Blue card: preferences, policies and negotiations between Member States', Katharina Eisele (2013), 'Why come here if I can go there? Assessing the attractiveness of the EU's Blue Card Directive for highly qualified immigrants, CEPS Paper in Liberty and Security in Europe No. 60 / October 2013; and Iván Martín and Alessandra Venturini (2015) 'A Comprehensive Labour Market Approach to EU Labour Migration policy', Migration Policy Centre Policy Brief, no. 2015/07, Robert Schuman Centre for Advanced Studies, European University Institute.

The EU Blue Card Directive[13], the only EU legal instrument fully in force so far in this field, has had a limited application[14], due in part to the high costs it imposes on both employers and migrants and in part to the coexistence and competition with national schemes for highly-qualified migrants.[15]

In the framework of the European Agenda on Migration, the European Commission has launched a review process of the EU Blue Card Directive, including a public consultation and an impact assessment already on course. The Directives on seasonal workers[16] and on intra-corporate transfers[17] were only adopted in 2014 and hence await transposition by Member States to be fully operational. However, the Report on the implementation of the 2005 Directive on researchers has identified a clear need for improvement in terms of transposition efforts by Member States[18]. A new Directive on Students and Researchers has been proposed and is waiting for approval by the European Parliament and the Council[19]. Overall, the high level of discretion of Member States in the implementation of the EU Directives on labour migration seems to limit the capacity of the EU to respond to labour market needs.

In this context, a precondition for a comprehensive legal labour migration policy responding to the needs of EU labour markets is a well-articulated labour market information system identifying and monitoring those needs. The European Agenda on Migration acknowledged that "the EU needs the tools to identify those economic sectors and occupations that face, or will face, recruitment difficulties or skill gaps. Existing tools already provide some information, but a more complete picture is needed". So far, EU labour market needs identification and forecast tools, such as the European Employment Observatory, European Vacancy Monitor, EU Skills Panorama, Cedefop Skills Forecast, or the European Job Mobility Portal, EURES,[20] briefly reviewed in Section 3, still rely largely on an aggregation of data collected by Member States. Whereas for the supply side of the EU labour market the EU Labour Force Survey ensures a common methodology and a coherent approach throughout the European Union, leading to a holistic view of EU labour force, the analysis of labour demand at EU level has not yet advanced that far.

This study summarises the results obtained through national instruments throughout the European Union, as reported by the EMN National Contact Points in their national contributions. It should be noted, however, that this method does not fully integrate the potential of intra-EU mobility of European workers to fill part of the demand in certain skilled occupations. In addition, the access of many non-economic migrants to the EU labour market requires a more systematic consideration of those potential workers in the determination of EU labour migration needs. Indeed, non-economic migrants (family reunification beneficiaries, asylum-seekers or foreign students) already make up 80% of total first-residence permits granted in EU Member States.[21] Policies to ensure their participation in the labour market and the effective use of their skills are not covered by this study, but need to be taken into account when considering the total impact of migration on EU labour shortages.

Finally, an increasingly relevant issue is that of intra-EU mobility of third country nationals legally living in Europe. Whereas in principle mobility rights are granted to several categories of third-country nationals covered by the EU's Migration Directives (long-term residents, EU Blue Card holders, students, researchers and posted workers), in practice their mobility rights are limited by a variety of administrative and legal hurdles.[22] Blue Card holders and their family members, for example, may move for the purpose of highly qualified employment after 18 months of legal residence in one Member State, but they still need to apply for a second Blue Card. All the conditions set out for obtaining it are reassessed by the second Member State. For legal labour migrants under Member States' legislation, the access to labour markets in other Member States is not granted[23]. Whereas intra-EU mobility of third country nationals should guarantee the respect of EU preference principle, low levels of intra-EU mobility of third country low levels of intra-EU mobility of third country nationals constitute a limiting factor to the efficiency of European labour markets and the matching of labour demand and supply across the EU.

[13] Council Directive 2009/50/EC of 25 May 2009 on the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment.
[14] See the Report on the implementation of Directive 2009/50/EC on the conditions of entry and residence of third-country nationals for the purpose of highly qualified employment ("EU Blue Card"), COM(2014) 287 final.
[15] Martina Belmonte (2015) The EU Blue Card Directive: Is there a need for a more comprehensive approach? Institute for European Studies, Policy Brief, Issue 2015.
[16] Council Directive 2014/36 on the conditions of entry and stay of third-country nationals for the purpose of employment as seasonal workers.
[17] Directive 2014/66/EU of the European Parliament and of the Council of 15 May 2014 on the conditions of entry and residence of third-country nationals in the framework of an intra-corporate transfer.
[18] Report on the application of Directive 2005/71/EC on a specific procedure for admitting third-country nationals for the purposes of scientific research, 20 December 2011.
[19] COM(2013)0151.
[20] EURES is not a forecasting tool, but rather it aims to provide information, advice and recruitment/placement (job-matching) services for the benefit of workers, employers and any citizen wishing to benefit from the principle of the free movement of persons. As such, it collects relevant information on labour demand and supply in EU Member States.
[21] Eurostat, statistics on residence permits issued
[22] See for example Report from the Commission on the application of Directive 2003/109/EC concerning the status of third-country nationals who are long-term residents, COM (2011) 585 final.
[23] EMN Synthesis report on Intra-EU mobility of third-country nationals, 2013, p. 7, http://ec.europa.eu/dgs/home-affairs/doc_centre/immigration/docs/studies/emn-synthesis_report_intra_eu_mobility_final_july_2013.pdf.

3 EU instruments and studies for forecasting labour market shortages and the need for labour migration

In recent years, the European Commission (notably DG Employment, Social Affairs and Inclusion) and its agencies have been active in identifying and forecasting labour market and skills shortages across Member States. However, as mentioned in Section 2, these instruments rely on an aggregation of data collected by Member States. The instruments also do not specifically consider whether migration can be used to satisfy labour shortages. The need to attract certain types of economic migrants in light of labour market and skills shortages has more often been the subject of ad-hoc studies commissioned by the EU and international organisations.

3.1 SKILLS FORECASTS BY THE EUROPEAN CENTRE FOR THE DEVELOPMENT OF VOCATIONAL TRAINING (CEDEFOP)

The **European Centre for the Development of Vocational Training (Cedefop)** provides forecasts on labour market trends in Member States, which focus on both the supply and demand for labour and skills in selected sectors, and cover the period 2013-2025. In general, the activities of Cedefop include[24]:

- Forecasting skills needs by analysing skills demand and supply;
- Analysing skills mismatches through theoretical and empirical research;
- Investigating future skills needs for a green economy;
- Developing a common European enterprise survey to identify changing skills needs; and,
- Providing a central access point for data and intelligence on skills needs in the context of the EU Skills panorama.

For its skill demand and supply forecasts, Cedefop employs a modelling framework, using harmonised statistics and a single methodology in order to ensure comparable forecasts. The macroeconomic model employed provides forecasts by economic sector and country. Labour market demand forecasts are made for 41 sectors/industries, 27 occupational groups and three broad qualification levels. Since 2004, the **Skillsnet -** a network composed of researchers and experts in skills needs and forecasting, has been coordinated by Cedefop. Among the publications produced by Cedefop with a view to identifying skills needs and measurement methodologies are: '**Future skill supply in Europe: Medium-term forecast up to 2020'**[25] in 2009 and '**Building on skill forecasts – Comparing methods and publications'**[26] in 2012.

3.2 LABOUR MARKET MONITORING BY THE EUROPEAN COMMISSION

The European Commission produces a number of periodic reports compiling information on skills needs in Member States. These include:

- The biennial **European Vacancy and Recruitment (EVRR) report** (published in 2012 and 2014). The EVRR is a key component of the Commission's endeavour to develop a systematic EU labour market monitoring system, in order to provide greater labour market transparency to stakeholders. Combining a variety of data sources, the EVRR identifies areas and sectors where there are labour market shortages in EU Member States.

- The European Commission's report '**Mapping and analysing the bottleneck vacancies in EU labour markets**' published in September 2014 also analysed expected bottleneck vacancies in each Member State. Based on definitions used in the European Vacancy and Recruitment Report 2012 and data gathered during fieldwork, the direct indicators of bottlenecks used were duration of vacancy filling, past/existing vacancies fillings and expected bottleneck vacancies.

- The **Eurostat Vacancy Survey** collects quarterly statistics from representative stratified sample surveys. Indicators used include the number of job vacancies and the job vacancy rate. However, as noted by the 'Skills Mismatch' (2012)[27] publication by Cedefop, the data remains provisional, partial and is not available by sector.

3.3 MATCHING LABOUR MIGRATION WITH LABOUR MARKET NEEDS - AD-HOC STUDIES

A number of recent publications have analysed the need for labour migration in order to address labour market and skills shortages in the EU and beyond. These include:

- **'Matching Economic Migration with Labour Market Needs'**, jointly produced by the OECD

24 Cedefop. Identifying Skills needs: http://www.cedefop.europa.eu/en/themes/identifying-skills-needs

25 www.cedefop.europa.eu/files/4086_en.pdf
26 www.cedefop.europa.eu/files/5518_en.pdf
27 Cedefop. (2012). Skills mismatch: The role of the enterprise. Luxembourg: Publications office of the European Union. Available at: http://www.cedefop.europa.eu/node/11828

and the European Commission (2014).[28] Based on a three years project by OECD and the European Commission, the publication provides evidence on the role that international migration plays in Europe and other selected OECD countries in terms of labour force and occupational take up.

- **'Matching Economic Migration with Labour market needs in Europe'**, which was an OECD policy brief covering the findings in EU Member States of the above-mentioned publication (2014).[29] The publication analyses projected labour market imbalances in Europe, occupational labour shortages and the use, mismatch and labour market outcomes of migrants' skills.

- **'Labour shortages and migration policy'**: an IOM publication funded by the European Commission (2012)[30]. The study investigates and assesses the existing pathways for identification of labour and skill shortages, as well as linking labour market needs and labour immigration policy development based on the experience within and outside the European Union (EU).

- '**Employment and Social Developments in Europe'**[31]: The European Commission regularly assesses the latest developments in society and the labour market across the EU. However, no suggestions are made how to forecast the need for migration labour.

- '**Growing potential of EU human resources and policy implications for future economic growth**' (2013), a European Commission Working Paper which briefly analyses the prospects for maximising the potential contribution of migration as a policy measure to enhance employment and GDP growth in the European Union.[32]

4 National labour migration policies and recent public and policy debates on labour migration

Most Member States contributing to the Study view migration from third countries as a potentially important source of labour, particularly in the context of rapid labour market transformations, demographic ageing or technological change. However, Member States differ in the extent to which they have developed policies to facilitate the process of matching labour migrants with shortages of specific skills/occupations in the labour market. They also differ in the importance that they give to labour migration relative to other policies for addressing these skills shortages, including labour market activation of the current resident population or investing in and/or reforming education and training opportunities.

This section begins (Section 4.1) by identifying the Member States which make an explicit link between their migration policies and specific shortage occupations. As will be seen, a majority of Member States do attempt to forge such links. However, in most cases, the resulting policy adjustments attempt to regulate only a portion of the total in-flow of labour migrants; most Member States continue to admit labour migrants without attempting to link their entry to particular shortage occupations. (The types of adjustments made to migration policy aimed at meeting particular labour shortages are explored in Section 5.5) The analysis then moves on to consider public and policy debates at national level on using migration to address labour shortages (Section 4.2) as these may affect the public policy choices of Member States.

4.1 MIGRATION AS A TOOL FOR ADDRESSING LABOUR SHORTAGES

Research has identified two different approaches to linking economic migration to labour market shortages.[33] One approach is '*demand-driven'*: it involves granting accelerated or simplified admission to migrants seeking employment in previously identified shortage occupations. In purely demand-driven systems, this decision is delegated to employers. This approach normally requires third-country nationals to have a specific job offer by a national employer before their application for a residence permit will be considered.

The second approach is oriented toward a *'human capital' or 'labour supply' models*, where admission frameworks are adjusted in order to attract migrants with characteristics that will place them in a favourable position for labour market insertion, and generate spill-over effects on growth and innovation. In the framework of this model, policy tools are needed to attract migrants with transferable skills or other qualities (e.g. investment potential) deemed desirable for the economy; but efforts are not made to link these migrants to pre-defined shortage occupations.

In practices, however, elements of the two approaches are often combined.

[28] OECD/European Union. (2014). Matching Economic Migration with Labour Market Needs. Paris: OECD Publishing
[29] OECD/European Union. (2014). Matching Economic Migration with Labour Market Needs in Europe: Policy Brief. Paris: OECD Publishing
[30] IOM (2012), Labour shortages and migration policy', available at this link: ec.europa.eu/social/BlobServlet?docId=9928&langId=en
[31] http://ec.europa.eu/social/main.jsp?catId=113
[32] European Union. (2013). Growing potential of EU human resources and policy implications for future economic growth. Luxembourg: Publications Office of the European Union, 2013

[33] This two-fold distinction is drawn from the IOM study, *Labour Shortages and Migration Policy* (2012), p. 14.

4.1.1 DEMAND-DRIVEN MODELS

Some Member States (CY, CZ, HU, LT, LU, NL, PL[34], SK) have not developed a strategic vision of labour migration as a tool for addressing labour shortages. For these Member States, the link between economic migration and efforts to address labour shortages is indirect: the admission of third-country nationals for the purpose of employment (i.e. their right to apply for a work permit and/or residence permit) is left to market forces, in particular individual employers, who can recruit third-country nationals, often after checking, through the implementation of some form of labour market test, for the availability of a national or a (mobile) EU candidate for the vacancy (see also Section 6.5).

In **Sweden**, since 2008, labour migration policy has been demand-driven, whereby employers have the right to recruit third-country nationals to fill vacancies if they cannot find suitable Swedish or European Union (EU) workers. The policy stresses flexibility for employers in order to respond to changing realities on the labour market. There are no quotas in place to determine how many labour migrants can enter the labour market. The system is open to labour migrants of all skills levels and nationalities and does not set any priorities as to whether migrants stay for short term periods or permanently.

Within this group of countries, there are certain Member States, including **Luxembourg** and **the Netherlands**, for whom third country foreign workers are an important source of labour. However, these Member States do not use migration policy instruments to try to match third-country national workers with occupational shortages. In the case of **Luxembourg,** the important presence of EU workers, including those who benefit from cross-border working arrangements, means that occupational shortage lists for hiring third-country nationals have not been used since 2012. **Austria** and **the Netherlands** also maintain that the labour potential within the EU (particularly since its most recent round of enlargement) is sufficient to address labour shortages.

Other Member States within this grouping, such as **Hungary** and the **Slovak Republic**, prefer to address labour shortages by developing better links between the educational system and labour market needs, rather than through labour migration.[35]

4.1.2 HUMAN CAPITAL OR LABOUR-SUPPLY MODELS

The majority of reporting Member States do attempt to forge links between their economic migration policies and specific skills shortages identified in the labour market. Although for these Member States, economic migration policy as a whole is not geared to meeting shortages in the labour market; however, labour migration is recognised as playing a useful role in meeting certain, narrowly defined labour shortages or needs.

For instance, most Member States see labour migration as an important source of highly-skilled labour (defined in terms of their educational attainment and/or level of remuneration) as well as entrepreneurs. However, for these countries, facilitating highly-skilled labour migration is not seen as a tool for addressing labour shortages but rather as an instrument for encouraging innovation and the move toward a 'knowledge economy'. This is the case in **the Netherlands**, for instance, where attracting and granting entry to highly-skilled migrants from third-countries is a key policy priority, but no migration policy modifications are made for particular shortage occupations.

In fourteen Member States (AT, BE, DE, EE, EL, ES, FI, FR, HR, IE, IT, MT, PT, UK), policy instruments involving elements of the 'demand-driven' and/or 'human capital' models have been developed in order to prioritise economic migrants with particular skillsets deemed to be in short supply (and/or, as in the case of **Ireland** and **the United Kingdom**, to restrict admission to third-country nationals with skills of which there is a surplus in the labour market).

However, in most countries these instruments only target certain subsets of labour migrants:

- Some countries reserve the use of such instruments for attracting low-skilled workers to elementary occupations (e.g. harvest workers in **Spain**; agriculture, livestock and fisheries workers in **Greece**); or for seasonal workers (e.g. in **Portugal**, seasonal workers are exempted from the annual immigration quota)
- In other countries, the instruments are used to select workers to highly-skilled occupations and are deliberately closed to low-skilled workers (e.g. **the United Kingdom** and **Lithuania**).
- In **Belgium**, labour migration policy at national level is not used explicitly to address labour shortages but **Belgium**'s regions, which, since 2014, can draft their own labour migration regulations focus on some labour shortages, or plan to do so.
- Certain Member States (e.g. **Estonia**) have developed the instruments for linking migration policy to shortage occupations, but these instruments have not yet been used.

In **Latvia**, experts of the labour market and migration field are considering the use of selective migration instruments which could compensate for possible labour shortages.

In practice the percentage of foreign migrants admitted on the basis of instruments aimed at addressing specific shortage occupations is often small (e.g. **Finland**, **France** and **United Kingdom**).

Ireland stands out for endeavouring to link most types of employment permits to identified labour market shortages or labour surpluses (see Box 1 below).

[34] Although there are some human capital-related elements in Poland in the system of the access of TCN to the labour market the employer-led demand driven model prevails

[35] In the case of Hungary, there are plans to examine whether a direct link between labour migration policy and shortage occupations may be established in the future.

Box 1. *Ireland: linking recruitment of third-country nationals to labour shortages and surpluses*

Ireland endeavours to ensure that most types of employment permits issued to third-country nationals are directly linked to identified labour shortages / surpluses. This objective is pursued by operating two types of occupational lists, both of which are based on a list of shortage occupations provided in the annual *National Skills Bulletin*.

The two employment permits lists are (i) A "Highly Skilled Eligible Occupations List" (HSEOL) and (ii) an "Ineligible Categories of Employment for Employment Permits List" (ICEL). The HSEOL contains occupations in which there is an identified shortage of qualifications, experience or skills, which are deemed to be required for the proper functioning of the economy. Applicants with the required skills may apply for Critical Skills Employment Permits, which have more favourable conditions attached. Other Employment Permits (EPs) are also linked to the HSEOL, including the Internship EP, for which the internship must be in respect of one of the employments on this list.

Applicants for other types of EPs (Intra-Corporate Transfer EP[36], General EP, Contract for Services EP, Sports and Cultural EP) must be applying for occupations that are not listed in the ICEL.

There are three types of EPs in Ireland which are not linked to the above mentioned occupational lists – Dependent / Partner / Spouse EP, Reactivation EP and Exchange Agreements EP. However, the first two of these permits contain other occupation-specific eligibility conditions, in particular the provision that the applicant must not apply for a job in a domestic setting with the exception of certain carers. In the case of Exchange Agreements EP, the eligibility conditions are prescribed in the exchange agreements themselves.

By broadening or narrowing the list of eligible occupations that third-country nationals can take up during periods of economic prosperity or economic downturn, Ireland aims to manage both the number and types of labour migrants entering the country.

4.2 PUBLIC DEBATES CONCERNING THE USE OF MIGRATION FOR ADDRESSING LABOUR SHORTAGES

In most reporting Member States, policy debates in the area of labour migration do not take place within the narrow confines of government but rather involve a multitude of actors, including parliament, the research community, social partners, NGOs, and, through the media, the general public. In certain Member States, including **France**, **Estonia** and **Hungary**, **public consultations** on the issue of migration have also been organised.

In most countries, public and policy debates are characterised by concerns about the use of labour migration as a tool for addressing labour shortages. The debates often prioritise the need to **activate the available labour reserve**, including already resident third-country nationals, thus portraying labour migration of third country national as a secondary measure to tackle labour shortages (AT, BE (Flanders), CY, IE, MT, LT, LU). In **Ireland**, for instance, the overarching policy of the government is to satisfy labour and skills demands by employing from within the EEA as far as possible, and to limit labour migration of third-country nationals to occupations with skills shortages. In **Luxembourg**, the mayors of 4 major cities (*Quattro Pole* network) established a draft framework agreement for life-long learning and initial training to address labour shortages of qualified workers.

Another concern voiced in public debates is the **challenges involved in estimating the demand for foreign labour**, in particular in the context of the current economic situation (AT, IT, CY). In **Cyprus**, although employing foreign workers has been highly controversial due to the economic crisis, yet, it is also accepted that in some sectors (unskilled agricultural or husbandry, skilled high-tech) foreign workers do not compete against nationals. In some Member States, public/policy debate in the area of labour migration **focuses primarily on the need for highly-skilled labour** (AT, CZ, EE, ES, NL, IE, LT, LU, LV, NL).

In a number of countries, discussions on migration have contributed to highlight structural issues within the national labour market (FI, FR, MT). In **France**, discussions focused on the fact that migration is one way of responding to structural difficulties in the labour market and should be connected with employment and vocational training policies. In **Malta**, a high reliance on non-nationals to fill positions has raised the issue of training Maltese workers to take on certain specialised jobs. In **Germany**, policy debate has focused on the need for substantial increase in immigration in view of an ageing population.

In some countries, policy debate in the field of labour migration has focused on specific sectors, most notably ICT (DE, IE, LU, IE), other STEM (or MINT)[37] professions and health (DE, LU). For instance, in **Ireland**, parliamentary debates have stressed that the growth of the ICT sectors should not be hindered by a lack of skilled professionals; recent measures have been taken to facilitate permits issued in this sector. In **Luxembourg**, the government has launched the strategy "Digital Luxembourg", where the main objective is to reinforce and consolidate the position of the country in the ICT sector; one element of this strategy includes making the Grand-Duchy attractive for a foreign qualified workforce. Public debate in Luxembourg has also focused the shortage of general practitioners (family doctors).

In several countries, such as **Belgium**, **Slovak Republic**, **Netherlands**, **Luxembourg**, public debates focus more on issues relating to **intra-EU mobility** than on the labour migration of third-country nationals. The fear of migrants occupying jobs which then become inaccessible for local workers, and the fear of migrant workers abusing social security benefits and infrastructures are further causes of

[36] In Ireland this permit is referred to as Intra-Company Transfer Employment Permit.

[37] STEM is an acronym referring to science, technology, engineering and mathematics. MINT refers to mathematics, information sciences, natural sciences, and technology.

concern. In **Belgium**, policy debate has focussed on problems associated with intra-EU mobility and service provision, including social dumping and fraud.

In **Sweden**, the exploitation of foreign workers by untrustworthy employers has been a major topic in the public debate and media coverage. Cases of seasonal workers being paid less than originally agreed have been an object of public debate. In this respect, measures to avoid exploitation are envisaged by the government.

In many Member States, as a result of these public debates recent changes in migration policies have been implemented (EE, IE, LT, LV, NL) or are currently being discussed (AT, BE, LU, LV). For example, in **Estonia**, extensive consultations led to amendments made to the Alien Act to accelerate procedures for employing highly-skilled specialists taking into account the needs of Estonian labour market.

5 Instruments used for identifying current and future labour and skills shortages and for anticipating the need for labour migration

5.1 DEFINING LABOUR SHORTAGES

Labour market shortages are broadly defined as a shortage or insufficiency of qualified candidates for employment when the demand for labour (either permanently or for a time period) exceeds labour supply. They are either measured as a quantitative lack of labour supply in relation to demand in specific professional groups or on the basis of future projections.

- **Current labour market shortages** are identified in the vast majority of Member States.
- **Future skills shortages** or **labour market shortage forecasts** are conducted in **BE, EE, FI, FR, IT, IE, LU, LV, NL, PT** and **SE**. The **Slovak Republic** and **Lithuania** are in the process of setting-up a comprehensive system to forecast labour market needs.

Seven Member States define and identify labour market shortages in national law regulations or acts (AT, EE, EL, FR, HU, IE, LT)[38]. Countries that have adopted definitions of labour market shortages in soft law include **Poland** and **Slovenia**. However, most countries have not adopted formal definitions of labour market shortages in national legislation or policy documents (BE, DE, FI, IT, LU, LV, MT, PT, SK, UK, HR). In **Latvia**, although no legal definition of labour shortages is provided, the obligation to carry out labour shortage analysis is enshrined in law[39].

In countries where definitions are not formally laid out in law or policy documents, **definitions can differ regionally and vary across the bodies and institutions** involved in the measurement of skill shortages. For example, labour shortages are measured at the regional level in **Belgium**, albeit in a similar way. Further, in **Finland** different definitions are used by different authorities and researchers.

5.2 CLASSIFYING LABOUR SHORTAGES

Member States use a variety of systems to classify labour shortages. The majority of countries classify labour shortages in terms of **sectors or occupation /professional groups** (BE, DE, EE, ES, HR, HU, IE, FI, FR, LT, NL, LU, LV, PT, SE, SI) and/or by **qualification and/or skill levels** (DE, IE, LU, NL, LV, SE, SI).

When assessing labour market shortages the ISCO-08 classification is used by **Finland** whereas equivalent national classifications are used in **Denmark**, **Ireland**, **Lithuania** and the **United Kingdom**. In **Latvia,** the national economy industries forecast is based on the Statistical classification of economic activities in the European Community NACE Rev. 2. In **Belgium (Flanders)** and **France**, list of occupations for which a mismatch between labour demand and supply is determined are commonly based on the Operational Directory of Professions and Occupations (ROME). In **the Netherlands**, although use is made of ISCO-08, the Dutch Occupations Classification Standard (SBC) is more widely used. Other countries, including **Greece**, **Italy** and **Portugal** classify labour market shortages by **employment type** (e.g. seasonal activity). In **Greece**, labour market shortages are classified according to employment type (employed activity, seasonal activity and highly qualified employment) and specialization.

Shortage duration is another, albeit infrequent, manner in which labour shortages are classified. For example, in the **Czech Republic,** types of labour shortages are classified by the duration of the offer of the vacancy (0-3 months, 3-6 months, 6-12 months, more than 12 months).

Certain Member States classify labour shortages according to their **degree of severity** (AT, FI, FR, IE, PL). In **France**, for example, 'the rate at which vacancies are filled' is used by the *Pole Emploi* as an indicator of labour market 'tensions' (along with the 'rate of tension' and the 'unfilled vacancy rate') rather than formally analysing labour market shortages. In **Finland** five categories are used to classify estimates for the (mis)match between supply and demand of

[38] In the Czech Republic, the Employment Act No. 435/2004 Coll. (paragraph 35), a definition of vacancy is provided. However, the term labour market shortage itself is not defined and identified in this Act. Nevertheless, the term labour shortages are perceived as unfilled vacancies (short/medium/long-term).

[39] Support for Unemployed Persons and Persons Seeking Employment Law. Latvijas Vēstnesis, No.80, 29.05.2002

workers[40]. Further, in **Ireland** the severity of skill shortages is classified as 'low', 'medium' and 'high'[41].

With regard to **national, regional and sub-regional levels of classification**, in the majority of countries, data on labour market shortages are disaggregated at the regional level (AT, BE, CZ, DE, ES, FI, HU, IT, LT, LV, PL). However, in **Latvia** only short-term labour shortage forecasts are assessed by statistical region. Further, in **Belgium** the Flanders and the Wallonia regions conduct separate analyses of labour shortages at sub-regional levels. In contrast, analyses of shortages are generally conducted from a national perspective in FR, IE, HR, LU, NL, SI, UK, PT[42].

Having said this, in **France,** certain relevant indicators of labour market tensions by occupation are incorporated at a regional level by DARES and *Pole Emploi*. Further, a regional perspective is in the process of being developed in **the Netherlands**. In **Slovenia**, labour shortages are noted for two specific national minority communities and **the UK** has a separate labour shortage list for Scotland.

Distinctions between **short-term** and **long-term labour shortages** are made in a number of Member States (AT[43], EE, EL, ES, FI, HU, IE, IT, LV, MT, NL, PL, SE). Short-term analyses are mostly based on current labour market statistics, whilst long-term shortages are identified via labour market forecasting tools. However, timeframes regarding what is considered 'long-term' differ. In the **Slovak Republic**, the labour market development forecasts are either 1 year (short-term) or 5 years (long-term).

Only a small number of Member States distinguish between **cyclical and structural shortages** (FI, FR, IT). In **Finland,** specific analyses help to determine if the underlying factors causing labour shortages are related to economic cycles or a structural issue. In **Italy**, the analysis of unfilled vacancies and expected recruitments includes structural components and, in some sectors considered, seasonal data is used to investigate cyclical trends. In **France** reports by '*France Strategie'* differentiate between temporary, seasonal and structural tensions.

Labour shortages are also in a few cases **classified by their causes**. **Belgium** distinguishes between quantitative, qualitative and working conditions as large causes of shortages in skill supplies[44]. Further, **Ireland** further refines skill shortages according to niche area where relevant, due to for example multilingual demands and retention issues. In **Finland**, the employer interviews also look into the reasons for recruitment problems.

5.3 MEASURING LABOUR SHORTAGES

Member States differ significantly in terms of the instruments they use to measure labour shortages.[45] Measuring labour shortages generally involves quantitative analysis of supply and demand in the labour force and this is discussed in section 5.4 below. The following sub-sections outline the main methodologies that are used for this purpose. With a small number of exceptions, the instruments outlined in this section 5.3 are not specifically geared toward anticipating the need for labour migration. These instruments can, in turn, be used to in create lists of shortage occupations, as outlined in section 5.4 below.

5.3.1.1 Taking stock of unfilled vacancies

Current labour shortages can be determined by taking stock of the **number of unfilled vacancies in certain occupations** officially registered (e.g. in PES offices) requiring specific relevant qualifications. In some countries, a certain period of time should have elapsed since the publication of the vacancy for it to be considered a shortage occupation. For example, in **Cyprus**, labour shortages are defined as the number of vacancies offering working terms and conditions of employment in line with the sectoral collective agreement, that failed to be matched by the Public Employment Services (PES) with suitable local unemployed within a period of six weeks from the day of its notification to the PES. In **Sweden**, the Public Employment Agency and the Statistics Sweden publish analysis on unmet labour demand and imbalances pertaining to demand and supply of labour (e.g. with regard to sector, qualifications, skills, occupation and the geographical (regional) dimension of these parameters).

5.3.1.2 Employer surveys

Employer surveys on recruitment needs are used to assess skill shortages in most reporting Member States (AT, BE, DE, EE, FI, FR, HR, HU, IT, LV, LU, MT, PL, SE, UK)[46].These consist of written questionnaires (e.g. Malta, France) and/or phone interviews (e.g. Ireland, Poland). **Different sampling techniques** are applied in Member States. For example, in **Latvia** quota sampling and stratified sampling methods are used to create representative samples, considering sector, size of enterprise and region of the enterprise. In **Austria**, the Job vacancy survey undertaken by *Statistics Austria* collects details on each vacancy in term of: name of occupation, minimum level of education preferred for this vacancy, number of working hours, expected income and how long a candidate has been sought.

[40] 1) Great shortage of job seekers 2) Shortage of job seekers, 3) Balance, 4) Surplus of job seekers and 5) great surplus of job seekers
[41] In the context of the National Skills Bulletin, on which the employment permits lists are based. Low is defined as 'a shortage of less than 1% of total employment stock. Medium is defined as 'a shortage between 1 and 3% of total employment stock' and high as 'a shortage of more than 3% of total employment stock'.
[42] In Portugal the labour market analysis informing the quota decree is conducted at the national level. However, the specific characteristics of the labour market in the Autonomous Regions of the Azores and Madeira are safeguarded.
[43] Both terms are without in –depth legal definitions.
[44] Which are in turn divided into employer-related causes, personal causes (i.e. mobility problems and job-searching behavior), causes related to public and private employment services and the market environment (i.e. business cycle, demographic developments and frictional shortages).
[45] The methodologies described below are in some cases overlapping and/or interrelated. For example, sector analysis could include forecasts or can be based on employer surveys.
[46] See Table A2.3 in Annex 3 for more details,

The **sizes of the survey samples** also differ significantly across countries. For example, in **France,** the national PES (*Pole Emploi*) conducts a 'Labour Market Needs' survey by sending a questionnaire to more than 1.6 million businesses in the private and agricultural sectors, as well as to part of the public sector.

In most countries, the results of employer surveys are not used to anticipate labour migration needs. Three exceptions are identified in the context of this study: **Finland**, where results of employer surveys can be indirectly used when determining the need for labour migration; **Malta**, where employer surveys contain a section focusing on labour migration; and the **United Kingdom**, where employer surveys are among the various sources of information used by the Migration Analysis Committee (MAC) to prepare the list of shortage occupations.

5.3.1.3 Sector analysis

Sector analyses are undertaken in a number of Member States (AT, BE, DE, EE, FI, FR, HU, IE, LV, LU, NL, PL, PT, UK), while in a few countries no sector analysis takes place (CZ, HR, IT, LT, MT). Sector analyses vary across countries in terms of their methodology, scope and the type of organisations which undertake them. In **Austria**, for example, industry occupation matrices, produced by the Austrian Institute of Economic Research, are used as a component of econometric forecast modelling which provide the basis for medium and long-term forecasts of the changes in labour needs. (*See Table A2.2 in Annex 3 for more details*)

In **Finland**, the Ministry of Employment and the Economy publishes annual sector reports and has issued a special report on the social and health sector. In **France**, a number of tools are available, including a quarterly survey; comparison of job offers across sectors and annual reports on vacancies. In some countries, only specific sectors are analysed, such as the ICT sector in **Luxembourg** and the automotive sector in the **Slovak Republic**. In **Sweden**, a few government agencies publish reports and forecasts in special fields. For instance, the National Board of Health and Welfare publishes projections on the future supply and demand of medical professions.

In the majority of countries, sector analysis is not used to determine labour migration needs. The exceptions are **Ireland** and the **United Kingdom**, where sector analysis feeds into the preparation of lists of shortage occupations. In **Ireland**, the annual National Skills Bulletin identifies shortages by broad occupational groups. This is a key source used to produce the Highly Skilled Eligible Occupations List. In the **United Kingdom**, sector analysis is incorporated within the top-down and bottom-up analysis conducted by the Migration Advisory Committee (MAC) for the shortage occupation list.

5.3.1.4 Forecasts/foresight analysis

Forecasts/foresight analysis are implemented in a number of Member States (AT, BE, DE, EE, FI, FR, HR, IE, IT, LV, LU, LT, MT, NL, PL, PT, SE, SK, UK) (*See Annex 3*). Data used as a basis for forecasts include employer surveys (DE, FR, HU, IE, LT, PL) and statistics provided by labour offices (DE, HU, SK). The frequency of the preparation of the forecasts vary across Member States from twice a year (e.g. DE, the Regional development prospects in FI), to annually (e.g. IE, LT, PT) and every two years (e.g. NL).

Foresight analyses are used for the purposes of anticipating labour migration needs in a number of Member States (AT, IE, IT, MT, PT, UK). The blue box below illustrates the case of **Italy**, outlining the methodology used and highlighting its special focus on migration.

Box 2. *Excelsior survey in Italy*

The Excelsior survey provides forecasts of labour demand and of occupational and training needs, as expressed by enterprises, on a yearly and quarterly basis. The data collected through the Excelsior survey focus on qualitative trends, such as a need for further training of newly recruited persons; the demand for specific experience and/or qualifications; and the professional profiles, sectors and skills that are mostly in demand.

The sectors of economic activity in the Excelsior information system are grouped into 28 clusters, specifically defined based on a theoretical sampling plan. These clusters include divisions (2-digit codes) and groups (3-digit codes), as specified in the official classification of economic activities, ATECO 2007.

This tool is intended to estimate the total labour demand of enterprises (i.e., both native and foreign workers). It also contains a section dedicated to anticipated need for foreign labour. Moreover, publications include a yearly and quarterly report exclusively devoted to foreign labour in Italy. The Excelsior survey's forecasts of future demand were used to determine Italy's immigration quotas in the latest 3-year policy papers on immigration and foreign nationals (Article 3(1) of the Immigration Law).

5.3.1.5 Qualitative studies or analysis

Qualitative studies are carried out in some Member States (BE, DE, EE, FI, HU, IE, LV, MT, NL, PL, PT, SK) (*See Annex 3 for more details*). In most Member States, qualitative analyses are not completed as a stand-alone component but usually feature in other instruments.

Three Member States (FI, MT, PT) reported the use of qualitative studies in efforts to anticipate the need for labour migration. For example, in Finland, the report prepared by the Labour Institute for Economic Research "Is labour shortage true?" developed a statistical indicator that describes the labour market situation in the cleaning sector and shows situations when it would be beneficial to increase labour migration. In **Portugal**, a report on labour shortages is published annually by an inter-ministerial group coordinated by the Planning and Strategy Department of the Ministry for Solidarity, Employment and Social Security (MSESS).

5.4 SHORTAGE OCCUPATION LISTS

Lists of shortages occupations exist in a number of Member States (AT, BE, DE, EE, EL, ES, FI, FR, HR,

HU, IE, LV, LU, LT, MT, NL, PL, SI ,SE, SK[47], UK) and broadly refer to identification of vacancies for which the demand outstrips supply.

National lists of shortage occupations are regularly updated every three months (ES), every year (AT, BE, HR, HU, MT) or twice per year (IE[48], EL, LT, SK), every 2 years (UK), or even every three years (FI). **The Netherlands** does not have a fixed periodicity. Certain countries do not produce a list or shortage occupations (CZ, IT, LU), others are in the process of establishing one (EE from 2016 onwards). In **France**, a 2008 Decree provided a list of occupations experiencing recruitment difficulties, and hence open to third country nationals.

National processes for developing the shortage occupation lists typically involve (1) the identification of relevant criteria for selecting shortage occupations and the collection of relevant data, (2) the organisation of multi-actor consultation (see section 5.d. Stakeholder Consultations), and (3) the final decision which occupations to include in the list, which typically lies with the government.

In most countries, the process of devising the list of shortage occupations is driven by a lead institution which is either the PES (BE, DE, EL, HR, LT, LV, MT, NL, SE, SK), or the Ministry of labour/interior (FI, EE, ES, IE, FR[49], PL). The **United Kingdom** is the exception, since the Migration Advisory Committee (MAC) is responsible for coordinating the entire process of devising a shortage occupation list. In **Austria**, the list is proposed by the social partners and approved by the Ministry of Labour.

List of shortage occupations are determined on the basis of a number of criteria. A prime set of criteria concerns the analysis of supply and demand in the labour market:

- **Demand side criteria** include statistics based on employers surveys and data on vacancies registered at the PES (as in Latvia, for instance). In **Poland**, until recently the demand side analysis focused exclusively on job offers submitted to the PES; a new methodology was recently devised through ESF co-financed project and now includes an annual enterprise survey, as well as an analysis of job offers published on the internet twice a year.
- **On the supply side**, the number of registered unemployed persons and their profiles are typically analysed. This supply side analysis may extend to the stock of future workers expected from the educational system. In Poland, for instance, data on unemployed registered with PES is supplemented by statistics on upper secondary school graduates, university students and graduates, the employed persons and vacant positions by occupation groups and the Polish classification of activity sections.

In a number of countries, the **combination of both demand and supply side** analyses leads to the calculation of an overall ratio or indicator used to devise the list of shortage occupations (e.g. AT, DE, EE, ES, FR, IE, HR, MT, NL, UK). For example, in **Austria**, labour market shortages are legally defined as not more than 1.5 unemployed job-seekers registered per vacancy (applicant-to-vacancy ratio). In **Croatia**, the list is elaborated on the basis of a comprehensive PES analysis that includes reported vacancies in the labour market, the number of available unemployed persons registered at the Croatian Employment Service (CES), the number of persons registered as employed at the CES during the period of one year, the results of an Employers' survey, the number of persons referred to education which is based on the Active Labour Market Policy measure "Training of the unemployed", labour market analyses of all regional offices, as well as the number of issued work permits for foreigners in previous reporting year compared to the total forecasted annual quota of work permits for foreigners for the previous year.

In **Lithuania**, the shortage list includes occupations for which there is high demand and not enough supply. It is considered the case when the demand is two times as high as the supply and the vacancy remains unfilled for 3 months. In **Poland,** the main indicator used to classify a given occupation as shortage is the occupation surplus (shortage) intensity indicator, expressed as the number of submitted job openings (vacancies) for an occupation in a given reporting period divided by the number of registered unemployed who represent the occupation in a given reporting period.

In most Member States, a static picture of the current labour market situation is typically completed by forecasts in terms of future demand for labour and labour shortages. In the **Netherlands**, for instance, the analysis of current job vacancies and registered jobseekers is completed by Labour Market analysis and forecast. Similarly, in **Estonia**, the list of shortage occupations is created based on a number of analyses, including labour demand forecast and qualitative labour needs analysis, as well as by sector-specific reviews, employer surveys, and current vacancies analysis. **Austria** is an exception since it bases its list on the current labour market situation only.

In certain countries, **a local/regional dimension** is included, either in the process of consultation (regions and local employers organisations in EL, regional PES

[47] The Slovak Republic has not yet carried out any analysis or forecast resulting in the drawing up of a list of shortage occupations The list of shortage occupations monitored as Labour force deficit does not need to contain all jobs, as employers are not required to report vacancies to the labour office, if they are not willing to fill them with third-country nationals.

[48] The employment permits lists (HSEOL and ICEL) are reviewed twice per year, drawing on the shortage list contained in the *National Skills Bulletin*, which is updated annually.

[49] The Ministry of the Interior in collaboration with the Ministry of Labour (FR)

offices in HR, HU, LT) or in the formulation of regional occupational barometers. Indeed, in several countries (FR, FI, HU), **both regional and national lists of shortage occupations are developed.** In effect, a bottom-up process is in place in **Finland**[50] and **Hungary**, where regional bodies will elaborate regional lists of occupational shortages and communicate them to the national level. Conversely, in **France**, the process is top-down, since the initially devised national list is subsequently divided up at a regional level.

Member States can be grouped into three broad categories, according to the extent to which their shortage occupation lists are used to anticipate labour migration needs.

- **Member States that identify shortages** (such as occupation barometers or bulletins) **but do not link their shortage occupation lists to labour migration policy** (HU, LV, LT, MT, NL, PL, SE, SI, SK): In some Member States, lists of shortage occupations (LSOs) are produced periodically which identify the shortage occupations but have no link to migration and/or adjusting migration policy. In **Hungary**, the results of the LSOs are used to determine scholarships in an effort to encourage the obtaining of specific qualifications pertaining to shortage occupations. In the **Slovak Republic**, instruments and tools for identifying labour market shortages are only used for determining active labour market policy tools and the education policy.

- **Member States which develop shortage occupation lists for purposes other than labour migration, but which make use of the lists in order to develop aspects of their labour migration policy** (BE, FI). In **Belgium**, although all three regions produce occupational barometers, LSOs are applied to third country long term residents in other Member States, providing for a simplified procedure for this category in the stated occupations. In **Finland**, although not directly related to migration, regional occupational barometers, which include a list of shortage occupations, are used when preparing regional work permit policies.

- **Member States that develop shortage occupation lists explicitly as instruments for determining the admission of third-country nationals** (AT, DE, EE, EL, ES, FR, HR, IE[51], LU, UK). In several Member States, lists of shortage occupations are directly used in determining admission policies for third-country nationals. In these countries, the LSOs are legally binding and could determine the conditions of entry and residence (more favourable conditions) for TCNs in the identified occupations. In **Austria**, for instance, two lists of shortage occupations (the Regulation for Skilled Workers and the Regulation for the Overdrawing of the Federal Maximum Number for the Employment of Skilled Workers) are legally binding for decisions by the branch offices of the Public Employment Service Austria on whether to issue employment permit and conditional assurances.

In **Sweden**, although there is not a direct link with LSOs and admission, a LSO is published twice annually by the Swedish Migration Agency in consultation with PES based on which employees in certain occupations can submit an application while in Sweden and wait for the Migration Agency's decision without leaving the country.

5.5 ADJUSTING AND MODIFYING (LABOUR) MIGRATION POLICY TO ADDRESS LABOUR SHORTAGES

As mentioned in Section 4.1, 14 out of the 25 Member States participating in this study have systems in place to identify labour shortages and make adjustments to their migration policies in light of these shortages. The methodologies used by these Member States to draw up shortage occupation lists are reviewed in Section 5.2. Different countries have introduced a variety of policy adjustments in response to these shortages, as discussed below.

In some countries, employers who wish to recruit a third country national for a position included in the list of shortage occupations are **exempted from having to implement the labour market test** (AT, BE, ES, IE, FR, HR, PL). In **Ireland**, for example, this applies to third-country nationals applying for a Critical Skills employment permit do not need to pass a labour market test[52]. In **Poland**, lists of shortage occupations are not produced; however, employers wishing to recruit third-country nationals for any occupation for a period of up to 6 months within a 12 month period have access to a 'simplified procedure' whereby the third-country national does not need to pass a labour market test nor indeed apply for a work permit.[53]

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[50] In Finland, the Employment and Economic Development Offices (15) are responsible for regional lists (occupational barometers) and the national occupational barometer is compiled by the Ministry of Employment and the Economy. The occupational barometers are not directly linked with immigration, but regional barometers are utilised when preparing regional work permit policies by the Centres for Economic Development, Transport and the Environment (15).

[51] Two types of occupational lists are developed explicitly as instruments for determining the admission of third-country nationals: the HSEOL and the ICEL. Both are based on a list of shortage occupations provided in the annual *National Skills Bulletin*, which is developed for purposes other than labour migration.
The two employment permits lists are (i) A "Highly Skilled Eligible Occupations List" (HSEOL) and (ii) an "Ineligible Categories of Employment for Employment Permits List" (ICEL).Other Member States, such

[52] Critical Skills Employment Permit is designed to attract highly skilled workers into the Irish labour market. Eligible occupations are in a significant shortage of supply and are deemed to be critically important to the Irish economy, or attracting annual remuneration of 60,000+.

[53] Poland's 'simplified procedure' is used most often in relation to workers in agriculture, construction, industrial processing and transport. If the employer wishes to retain the worker beyond 6

Box 3. *Application of Labour Market Test*

Labour market tests are used in most Member States (AT, BE, CY, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, SI, SK, UK) as a tool to manage labour migration.

Member States apply exceptions to certain categories of workers (such as highly-skilled workers, researchers); however these categories vary across countries.

Member States can also apply different methodologies in undertaking LMTs. In most cases, the labour market is tested by ensuring that suitable national / EU candidates were not available to take up a specific vacancy, within a specified time period. For example in **the Netherlands**, the Labour Market Test does not apply to highly-skilled workers. Every non-EU national is entitled to work in the Netherlands if they earns more than € 4.189,- per month (if younger than 30: € 3.071,- per month). A foreign employee who meets this wage-criterion is considered as a highly-skilled worker. In **Lithuania** the labour market test is not carried out for highly skilled workers who receive three times the average salary, i.e. € 2.140 per month in 2015.

In most of the Member) States, the employer sets out the required characteristics and qualifications for the job, and communicates these to the relevant authorities (e.g. public employment service (PES); national / local employment centres etc.) for a particular duration. For example, in **Ireland**, the test requires that the vacancy in question must have been advertised with the Department of Social Protection (DSP) employment services/EURES employment network for 2 weeks, in a national newspaper for at least 3 days and in either a local newspaper or jobs website for 3 days. In **Sweden**, it is required that the vacancy is advertised for 10 days by the Swedish Employment Service. However, the employer is not obliged to interview or hire EU/EEA nationals or a national from Switzerland to fill the vacancy. **Cyprus** applies the labour market test for all professions but those included in the list of non-eligible occupations for migration[54] and highly remunerated professions (at least € 35,000 per year). The vacancy is required to be advertised through newspapers, the PES and EURES and to contained full details of the positions.

Other countries make **exceptions to the numerical limits (quotas)** that they apply to total annual migration (IT, EE, HR, PT), or introduce different quotas for different economic sectors/occupations depending on labour demand (EL). In **Greece**, for example, the total number of third-country workers that can be employed for specific occupations deemed to be in short supply (determined on an annual basis in a Joint Ministerial decision) can be increased by 10% for unforeseen reasons.

In other countries a **points-based system** is used where migrants who are offered a job in certain shortage occupations are awarded additional points. In **Austria**, for example, third-country nationals who have been offered a job in a shortage occupation are eligible for a Red-White-Red (RWR) Card (which permits them to work for 12 months) if they reach a minimum of 50 points according to certain pre-defined criteria, including type of qualifications, work experience, language skills and age. However, **Austria**'s points-based system (the RWR Card) is not limited to third-country nationals who have been offered a job in a shortage occupation. Other categories of third-country nationals eligible to apply for a RWR Card include 'very highly qualified workers', other key workers, university graduates and self-employed key workers.[55]Another type of adjustment to the admission rules used in certain countries involves **reduced minimum income thresholds** for third country nationals who are recruited for certain occupations (e.g. EE, EL, IE, LV, NL, UK). For example, recent legislation adopted in **Estonia** foresees that, for third-country nationals that are offered jobs listed in the list of shortage occupations, the minimum salary requirement will be lower than that required for other labour migrants. (The overall requirement for labour migrants in Estonia is that they must earn a salary that is at least equal to the latest annual average wage, multiplied by a coefficient of 1.24. This minimum income threshold is higher in respect of certain EU Blue Card applicants).

A further adjustment envisaged in the legislation of certain Member States is **facilitating access to the labour market to certain groups of third-country nationals already in the country**, such as third-country nationals admitted for the purposes of study and/or asylum-seekers and foreigners whose deportation has been suspended. In **Germany**, for example, the residence permit of third-country nationals who have successfully completed a course of study may be extended for a period of up to 18 months (and those who have successfully completed a vocational training course in Germany for up to 12 months) in order to seek a job commensurate with their qualifications This is also the case in **Lithuania** for up to 6 months. In **Sweden**, in certain circumstances, asylum seekers who have received a final decision rejecting their application for asylum can apply for a residence and work permit while in the country. Further, **France** has implemented a one year permit for students who obtained at least a Master degree in France and who look for a professional experience, provided they fulfil employment and salary conditions in relation with their training.

Other Member States, such as **Ireland**, offer **immediate eligibility for family reunification** provided they hold a Critical Skills Employment Permit. Some Member States conclude **bi-lateral agreements with specific third-countries** which allow simplified access for workers from those countries to certain occupations (e.g. FR). For example, in **France**, shortage occupation lists are included in specific bi-lateral agreements with third-countries, including Benin, Gabon, Senegal, Tunisia, among others; third-country national workers from these countries who are offered a job listed as a shortage occupation within these agreements are not subject to the labour market test.

months, after three months they must apply for a work permit (however, the third-country national continues to be exempted from the labour market test).

[54] This is a measure the entered into force in 2010 due to the effect of the economic crisis.

[55] For further details regarding admission criteria see www.migration.gv.at/en/.

In **Finland**, third-country nationals are allowed to work for a period of up to three months with a visa or on a visa-exempt basis if they are citizens of a visa-exempt country in sectors that require seasonal workers, such as berry farms.

Finally, some Member States introduce **temporary regularisation mechanisms** to incorporate third-country nationals who are already working in certain shortage occupations (e.g. Austria, through the use of trade licenses in the nursing sector; and France).

5.6 STAKEHOLDER CONSULTATIONS

In most countries, stakeholder consultations are an important part of the process of formulating and/or adjusting labour migration policy. In at least 12 out of the 25 countries involved in this study, formal consultative structures have been used or specifically set up for this purpose (AT, BE, CZ, EL, FI, FR, HU, IE, IT, LU, MT, NL), while in other countries the involvement of stakeholders is more ad-hoc (CY, HR, PL, LT, SK). In **Lithuania**, no instruments are in place to consult stakeholders in the formulation and adjustment of migration labour policy. In **Latvia**, no dedicated instrument to consult particularly on the formulation and adjustment of migration labour policy exists; meanwhile labour migration policy issues are discussed with stakeholders at the Tri-partite Vocational Education and Employment Co-ordination Sub-Council. In **Portugal**, social partners, through the Permanent Committee for Labour Matters, may issue a prior opinion on the proposed annual quota to be approved by the Council of Ministers. In Cyprus, social partners are member of sectoral tripartite technical committees, which act as consultative bodies during the labour market test.

Formalised mechanisms typically take the form of social partner membership of consultative bodies, including, the administrative board/council of the PES (AT, CZ), national advisory councils on the rights/employment of foreign worker (BE, CZ), regional committee/councils for immigration matters (FI, IT), Economic and Social Councils (CZ, EL, SK, NL), representative chambers (including workers, trades and crafts, commerce) (LU), vocational training councils (HU, SK), labour foundation (NL), or Expert Group on Future Skills Needs complemented by formalised evidence-based review processes (IE). In **Sweden**, it is foreseen in legislation that social partners should be given the opportunity to provide an opinion on whether pay, insurance coverage, and other terms of employment offered to a work permit applicant are in line with those in Swedish collective agreements or practice in the industry or occupation.

In addition to social partners which are widely consulted, other stakeholders are also involved in many cases (e.g. CZ, EL, FI, IT, IE). For instance, in the **Czech Republic**, the committee on the rights of foreigners comprises representatives of both public administration and civil society (international organisations, NGOs, researchers). Similarly, the **Greek** Economic and Social Council is based on tripartite division of stakeholders (employers, entrepreneurs and workers) and other organisations of farmers, free lancers, consumers, environmental organisations, organisations for the rights of people with disabilities, organisations for gender equality, and local government.

All Member States that produce shortage occupation lists (AT, BE, DE, EE, EL, ES, FI[56], FR, HR, HU, IE, LV, LU, LT, MT, NL, PL, SE, SK, UK) involve stakeholder consultations in this process – regardless of whether these lists are linked to labour migration policy or not. In these countries, a main coordinating actor – typically the PES or the Ministry of Labour – consults a variety of stakeholders in the process of identifying occupational shortages.

Different ministries and state agencies/administration play an important role in determining the list of shortage occupations in many countries (AT, DE, EE, EL, ES, FI, FR, HU, IE, LV, MT, NL). In **Ireland**, for instance, the Department of Jobs, Enterprise and Innovation engages closely with the Health Service Executive and the Department of Health since between one quarter and one third of all employment permits are issued to workers in the health sector in 2014-2015. In **Estonia**, the first list of shortage occupations, due to be launched in 2016, will be determined chiefly through cooperation of different ministries. In **France**, a number of national agencies and services submit data for the purpose of developing the national list of shortage occupations, including the PES, publicly-funded research institutes/organs (DARES, INSEE), and the unemployment benefits provider. In **Malta**, entities such as the Malta Tourism Authority, the Malta Council for Sports, the Health Department, the National Commission for Further and Higher Education are consulted. In **Greece**, regional administrations are consulted.

- In most Member States, **social partners are key stakeholders** in the process of determining lists of shortage occupations (AT, SE, ES, EL, BE, FR, FI[57], HR, HU, IE, LV, NL). Their knowledge of the labour market and future skills needs make them a prime interlocutor within national consultations processes. **Austria** stands out in this regard since social partners have a central role in formulating the list through a dedicated bipartite committee. Social partners and employers are consulted directly – typically through employer surveys and/or interviews (BE, EE, LV, PL) or consultation of employers' associations and representatives of social partners - and/or through representative

[56] In Finland, various stakeholders (social partners included) are consulted when preparing regional work permit policies. However, such consultation does not take place when occupational barometers are prepared (regional occupational barometers are prepared by the Employment and Economic Development Offices after which the national barometer is compiled by the Ministry). On the other hand, these regional occupational barometers are taken into consideration when preparing the regional work permit policies.

[57] Regarding regional work permit policies only. Those policies are prepared by the Centres for Economic Development, Transport and the Environment in cooperation with the Employment and Economic Development offices, labour market organisations and other cooperation partners in order to chart the labour market situation and the availability of labour in different professional fields.

bodies, such as the Economic and Social Council (EL), professional chambers (HR, HU) and broader multi-partite bodies (see below).

- In a number of Member States, a **number of other multi-partite organisations / institutions** are consulted in order to determine the list of shortage occupations (FI[58], HU, IE). In **Hungary**, county-based vocational training committees are responsible for adopting country-level shortage occupations lists; these committees consist of 7 members representing local employees and employers' organisations, the PES, the department of education of the county government office and the county's general assembly. In **Ireland**, the work of the Expert Group on Future Skills Needs, composed of representatives of business, employees, education, government departments and state agencies, is considered by the Department of Jobs, Enterprise and Innovation when the list of shortage occupations is being compiled. The DJEI also meets with a range of stakeholders including employers, government agencies, and trade unions.

- **Labour market and migration experts** are also commonly involved in the process of determining the list of shortage occupations (BE, NL, UK; in BE these experts are sourced from within the PES). In the UK, in particular, shortage occupation lists are determined by the Migration Advisory Committee (MAC). The MAC is a non-departmental public body made up of economists and migration experts that provides migration advice to the government. The MAC also releases a call for evidence to relevant stakeholders.

5.6.1 CHALLENGES AND RISKS ASSOCIATED WITH EFFORTS TO IDENTIFY LABOUR SHORTAGES

A number of Member States have identified **challenges and risks** associated with the use of instruments for identifying labour shortages and the need for migrant labour (BE, CZ, DE, EL, FI, FR, IE, IT, LT, LV, NL, PL, SK, UK). Most of the reported challenges are of methodological nature (BE, CZ, DE, FI, IE, IT, LV, UK) and/or related to external challenges affecting efforts to forecast labour shortages, including technological, economic, political and sociological developments in the labour market (DE, FI, NL). It should be noted that in countries where there is no (significant) shortage of labour identified (e.g. **Latvia**) the effects of any methodological issues are not considered very substantial. Furthermore, **Finland, Latvia** and **Poland** reported that a more systematic and coordinated way of using existing tools and disseminating the results to facilitate policy is needed in their countries.

Spain has reported that as the labour market test is only applicable for labour migration but it is not applicable for family migration, it has a limit impact on the managing of flux.

5.6.2 METHODOLOGICAL CHALLENGES

Even in conditions of excellent labour market data and the use of a combination of approaches to establishing shortage occupations, there are a number of methodological challenges in identifying labour shortages pertaining to accurately accounting for external factors (such as economic cycle, technological developments, cross border outsourcing, shifts in education and training patterns, as well as changes in production organisation, wages and working conditions).[59]

A common challenge identified in **Austria, the Czech Republic, Germany, Finland, Ireland** and **Lithuania** is that public employment services are not informed by employers for all unfilled vacancies. In **Germany** and **Finland**, it is estimated that there may be twice as many unfilled vacancies as those provided by the public statistics, which could affect the accuracy of the occupational barometer system that is based on the estimates of the Employment and Economic Development Offices. In **Belgium**, a challenge for labour shortages lists to be used for labour migration, concerns the classification of individual occupations. The shortage occupation lists drafted in 2006 is said to include occupations that are too broad, which makes it difficult to use the list as a labour migration tool. In **Austria**, Public Employment Service has rather limited information on vacancies in the highly-qualified segment because job openings and job-seekers that are registered are mostly in the low-qualified and qualified segments of the job market. **France** has reported challenges related to the lack of connection between the tools used for identifying labour shortage and the list of shortage occupations. Moreover these lists are not in compliance with the labour market needs as analysed by the private sector.

In the **United Kingdom**, the primary challenge identified with the Shortage Occupation List is that it is based on existing statistics and as such it is reactive rather than proactive. To address this challenge, the Migration Advisory Committee commissioned a research project in 2014 that seeks to provide an evaluation of existing forecasting migration methods.

5.6.3 CHALLENGES RELATED TO EXTERNAL DEVELOPMENTS

External challenges most commonly affect efforts to forecast changes in labour supply and demand. In **Finland**, the challenge seems to be the problem of balancing the supply and the demand in the labour market: even within the same field, there can be simultaneously both unemployed job seekers and job vacancies that employers find hard to fill. The labour market outlook is affected by the regional mobility

[58] See footnote 57.

[59] IOM (2012), Labour shortages and migration policy', available at this link: ec.europa.eu/social/BlobServlet?docId=9928&langId=en

which again is exacerbated by the situation in the housing market.

In **the Netherlands**, the Social and Economic Council has noted that unforeseen technological developments can affect labour market forecasts. By easing trade, for example, technological developments can have a direct influence on the nature of the occupations and the number of workers required. Economic, political and social developments could also alter the relationships between sectors and between countries.

6 Monitoring the outcomes of labour migration policy in relation to shortage occupations

Analysis of the effects of labour migration on shortage occupations could provide useful information to policy-makers aiming to adjust admission policies in order to address labour shortages. Although most Member States have mechanisms in place to monitor labour migration in general; in the vast majority of Member States, the impact of labour migration on shortage occupations in particular is not monitored as such (CY, EE, EL, LT, LU, LV, NL, PT, SK, UK), monitored only to a limited extent (BE, DE, ES) or on ad-hoc basis (AT, DE, FI, FR, SE). The impact of migration on shortage occupations is monitored in **Croatia**, **Ireland**, **Italy**, **Malta** and **Poland**. Monitoring the impact of migration on shortage occupations is laid out in legislation in **Croatia** and **Italy** ; envisaged in soft law in **Malta**.

6.1 MEMBER STATES WHERE NO MONITORING OF THE IMPACT OF MIGRATION ON SHORTAGE OCCUPATIONS TAKES PLACE

In nine Member States, no monitoring of the impact of migration on shortage occupations takes place (CY, EE, EL, LT, LU, LV, NL, PT, SK, UK). Whilst these Member States monitor the flows of labour migration in general (e.g. with respect to net flows of migrants, types of residence permit and visas issued); the monitoring does not extend to the impact on shortage occupations.

With regard to plans for future measures, in **Estonia**, a list of shortage occupation is to be introduced in 2016 and revised after every 2 years, in conjunction to which the match of labour immigrants and labour market needs will be monitored more closely. In **Greece**, a Migration Policy and Social Integration Committee will be set up which would be mandated among other tasks to monitor the developments in migration movements. In **Portugal**, no formal monitoring instrument is envisaged; however, a Report drafted by the Institute for Employment and Professional Training analyses the level of implementation of the quotas.

6.1.1 MEMBER STATES WHERE MONITORING TAKES PLACE ON AN AD-HOC BASIS

Five Member States report that, whilst no systematic or periodic instruments to monitor the effects of labour migration on shortage occupations exist, the effects on shortage occupations have been evaluated on an ad-hoc basis (AT, DE, FI, FR, SE). In **Austria**, evaluation reports of the Red-White-Red card in 2012 and 2013 provided statistical analysis on the occupational profiles of card holders and analysed its effects as an immigration management instrument. In **Germany**, studies dealing with skilled labour shortages and migration, including forecasts and future projections have been published by research institutions and professional associations. In **Finland**, when regional work permit policies are prepared, the effectiveness of the previous policy is taken into account. Ad-hoc monitoring of labour migration on occupations in particular sectors has also taken place. For example, in the beginning of 2015, the situation of flight attendants was monitored as the national airline Finnair outsourced its personnel as a cost-saving measure. In **France**, the impact of shortage occupations was analysed in 2011 when the list was redrafted. The subject was once again addressed as part of an annual report published by the Parliament on immigration and asylum and was addressed during a Parliamentary debate in 2013; however, the debates did not give rise to any new measures so far.

6.2 MEMBER STATES WHERE MONITORING IS TO A LIMITED EXTENT WITH REGARD TO PARTICULAR CATEGORIES

In **Belgium**, the regional economic migration services publish statistics on work permits granted which allow for a breakdown to specific shortage occupations for citizens of new EU Member States to whom restrictions on the free movement of workers apply (Croatia until 30/06/15[60]) and third-country long term residents from another Member State, as both categories require a work permit for a specific shortage occupation to access the labour market. In **Germany,** although the Federal Employment Agency does not record any data on the filling of shortage occupations by newly-arrived third-country nationals, there is availability of statistics for medical practitioners (ISCO-08 job category 221) disaggregated by country of origin.[61]

6.3 MEMBER STATES THAT CONDUCT REGULAR MONITORING THE IMPACT OF LABOUR MIGRATION ON SHORTAGE OCCUPATIONS

Five Member States have instruments to monitor labour shortages and migration on a permanent basis (IE, IT, HR, MT, PL). In **Croatia** and **Italy**, the process by which labour migrants fill in labour shortages is monitored as part of formalised process to determine annual admission quotas, while in **Ireland** and **Malta**, this analysis feeds into the process of determining Lists of Shortage Occupations. In **Poland**, the monitoring of shortage and surplus occupations and migration labour is used for analytical purposes only to keep track of phenomena concerning demand for labour and supply of labour resources by territories and occupations. Box

[60] http://ec.europa.eu/social/main.jsp?catId=1067
[61] Statistics include only cumulative values over the course of a year,

4 below provides more details on the methodologies used for monitoring in **Ireland** and **Italy**.

Box 4. **Monitoring the impact of migration on shortage occupations – the examples of Ireland and Italy**

In **Ireland** ***National Skills Bulletin*** (NSB), an annual report which aims to identify shortages in the Irish labour market, has a specific component within its analysis which focuses on the effect of migration on the Irish labour market. The Department of Jobs, Enterprise and Innovation monitors the number of permits issued on an ongoing basis in the context of the bi-annual review of shortage lists. The National Skills Bulletin, published by the Expert Group on Future Skills Needs (EGFSN), identifies occupational groups using the SOC 2010 system of classification. The demographic profile of 130 occupational groups is analysed, together with rates of expansion, replacement and turnover and proportion of non-Irish employed. A wide variety of sources are used by the SLMRU to cumulatively build a comprehensive picture of skill availability. The EGFSN also publishes a Vacancy Overview and sectoral studies.

In **Italy**, an electronic register of foreign labour supply and demand was set up which links to the registers of National Social Security Institute (INPS) and the Questure (provincial police headquarters). The electronic register provides for automated and centralised information at the Single Desk for Immigration on entries for work reasons and employment relationships and enables regular monitoring. This monitoring activity serves as a basis for setting future immigration quotas. The electronic register of INPS contains information about the type of occupation and profession. This type of information, however, is not public. It can only be obtained upon written request and after authorization of the competent authority.

Social partners and other stakeholders participate in the monitoring in most of the Member States which have some monitoring instrument in place (DE, FI, HR, IE, IT, MT, PL, UK). In some countries, social partners are involved in the discussions on setting up admission instruments (FI, HR, IE, UK) while in other countries, they have provided some information or drafted reports. In **Germany**, for example, a number of professional associations such as the Association of German Engineers have produced analytical reports and forecasts. **France** has reported that representatives of various occupational branches were disappointed not to have been included in the drafting of shortage occupations and the monitoring measures. These bodies have established their own observatories and foresight tools for monitoring shortage occupations. This is an indicator for scope for further measures in actively engaging these stakeholders.

6.4 CHALLENGES ASSOCIATED WITH THE MONITORING OF THE IMPACT OF LABOUR MIGRATION ON SHORTAGE OCCUPATIONS

Member States have reported on challenges in monitoring the impact of labour migration on shortage occupations, including on difficulties and lack of standardised data collection (AT, BE, CZ, EL, FI, PL, SE), limited human resources to assess and analyze the data (HR), no formalised role of social partners (BE) and use of other residence permit channels (FI). In particular, **Austria, Belgium** and **Finland** have reported on a lack of standardised monitoring linking employment with immigration statistics. Box 5 below outlines the issues in the cases of **Belgium** and **Finland**.

Box 5. **Difficulties encountered in data collection - the examples of Belgium and Finland**

In **Belgium**, for labour shortage uptake to be monitored, the regional economic migration services would need to be able to register every work permit by occupation and a concerted effort would be needed to link two different systems: 1) the databases of the regional public employment services giving an accurate name and description of each (shortage) occupation, linked to occupational codes (ideally comparable at the European level), and 2) the application systems of the regional economic migration services. The latter would then only grant work permits on the basis of the codes based database. In this way labour migration would be accurately linked to what the public employment service knows of the needs of the labour market and the shortage occupations.

In **Finland**, the statistics of different administrative sectors are not compatible. In its performance audit report on work-based immigration, the National Audit Office of Finland (NAO) highlighted the shortcomings in the registration of and statistics on the use of foreign labour. As information on temporary foreign workers is fragmented in different authorities' registers, it is difficult to make a reliable estimate of the amount and use of foreign labour. A working group proposed a statistical system as a solution; however, the development of the system has not been started due to financial reasons. Furthermore, there is no systematic monitoring of what kind of significance the permits granted have (had) from the labour shortage point of view. Furthermore, there is no monitoring with regard to what happens after the permit has been issued – i.e. have the persons in question remained in the country or left and have they moved to other employment.

6.5 MECHANISMS OR TOOLS TO MONITOR INTRA-EU MOBILITY

6.5.1 MONITORING THE MOBILITY OF EU NATIONALS

The vast majority of the Member States included in this Study reported that although statistics are collected on the employment of mobile EU nationals (e.g. in the form of administrative data, surveys and censuses), the take up of shortage occupations by intra-EU nationals is not specifically monitored.

- Sources of data on the employment of mobile EU nationals include **administrative data** collected by labour offices or Ministries of Labour (AT, BE, CZ, DE, FI, HU, IT, SK), immigration authorities (HU, FI, SE before 2014), tax authorities (FI, SE) and/or national statistical offices (AT, FI - only for permanent residents - HR, SI). For instance, in **Austria**, a labour market database records every employment relationship in the private sector from the moment the social insurance authorities gain knowledge of it. However, it only registers the industry of the employer and not the particular occupation of the worker. The Croatian Employment Service has information on third-country nationals' intra-EU mobility only in cases when they were registered as unemployed.

- **Surveys** (IE, UK) – In **Ireland**, the main source of data on EU citizens working in Ireland is the Central Statistics Office which publishes quarterly labour force survey results in the form of the Quarterly National Household Survey. In the **UK**, the immigration of EU (and non-EU) citizens for work-related reasons is estimated using the International Passenger Survey (IPS)[62]. The IPS does differentiate between individuals with a job offer and those looking for work, but does not record whether individuals with a job offer are filling unfilled vacancies, or whether the vacancies are considered shortage occupations.

- **Population censuses** (e.g. EE, FR, HR, LT).

In the case of **Greece**, **Latvia**, **Malta,** and **Portugal** no statistics on the employment of mobile EU nationals are collected at all.

6.5.2 MONITORING THE INTRA-EU MOBILITY OF THIRD-COUNTRY NATIONALS

Some Member States provided information on their approach to monitoring the intra-EU mobility of third-country nationals (BE, EL, FR, HU, LT, LU, UK). Most of these countries (EL, FR, LT, LU, UK) reported that there are currently no tools in place to monitor intra-EU mobility of workers filling job vacancies. In **Belgium**, however, the LIMOSA database[63] of the federal government registers workers who are posted from another EU country or from a third country to execute a temporary service in Belgium, as well as self-employed workers who come to execute work in Belgium. In **Hungary**, the inflow of third-country national workers is statistically analysed on a yearly basis; the number of work permits and the respective sectors are examined. However, this analysis has no direct contact with policies on labour market shortages. In the **Czech Republic**, employers are obliged to inform PES when employing any foreigner, yet no systematic monitoring of intra-EU mobility is taking place.

This anecdotal evidence can be supplemented with the findings of the 2013 EMN study '*Intra-EU mobility of third-country nationals'* which concluded that there is limited availability of relevant statistics on the phenomenon of intra-EU mobility of third-country nationals.[64]

[62] IPS http://www.ons.gov.uk/ons/about-ons/get-involved/taking-part-in-a-survey/information-for-households/a-to-z-of-household-and-individual-surveys/international-passenger-survey/index.html; Data are published on a quarterly basis as part of the Office for National Statistic's Migration Statistics Quarterly Release (MSQR http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/february-2015/stb-msqr-feb-2015.html).

[63]) https://www.socialsecurity.be/foreign/en/employer_limosa/home.html

[64] European Migration Network (2013), 'Synthesis Report Intra-EU Mobility of Third-Country Nationals"

7 Conclusions

The statistical data collected in the context of this study allows for a number of tentative observations to be made about the scale and type of labour shortages affecting Member States. Firstly, the scale of unfilled vacancies in the EU is significant, even considering only six pre-selected sectors. (See Table 1 in Section 1.3). Secondly, highly-skilled occupations are not the only in which labour shortages are experienced – medium-skilled and low-skilled occupations, including home-based personal care workers, cooks, waiters and cleaners are also in demand.

In recent years, the European Commission and its agencies have been active in identifying and forecasting labour market and skills shortages across Member States. However, these instruments do not specifically consider whether migration can be used to satisfy labour shortages.

While most Member States view migration as a potentially important source of labour, they differ in the extent to which they have modulated their labour migration policies in order to try to match labour migrants with specific shortage occupations. While fourteen out of the twenty-five Member States that participated in this study have introduced such policies, in most cases, the resulting policy adjustments focus on a very specific, narrowly defined list of (shortage) occupations; most Member States continue to admit labour migrants without attempting to link their entry to particular shortage occupations. **Ireland** is an exception as it has developed policy tools aimed at gearing almost all types of economic migration to identified labour shortages.

Current public and policy debates on labour migration indicate that public opinion may be an important barrier for Member States to develop more extensive links between their economic migration policies and identified labour shortages. Public concerns cover a range of issues, including the substitution effect, where third-country nationals are perceived to be recruited at the expense of the local workforce, social dumping and use of welfare benefits.

The vast majority of Member States have systems in place to try to identify current labour market shortages; fewer (only ten out of the 25 taking part in this study) have reported systems in place to forecast future labour shortages. Member States differ significantly in the methodologies they use to measure and classify labour shortages. Taking stock of unfilled vacancies (calculated in terms of the difference between number of job openings and the take up of these vacancies) is the most common method applied in Member States; other methods include employer surveys (fifteen out of twenty Member States); sector analysis (fourteen out of twenty Member States); forecasts/foresight analysis (nineteen Member States) and qualitative studies or analysis (twelve Member States). It should be considered that these instruments often overlap and/or are jointly implemented.

Lists of shortage occupations (LSOs) exist in 21 of the 25 Member States included in this study. Whilst

Member States use different criteria to decide which occupations to include in these shortage lists, there is usually a three-step process involved in their development, including, (1) quantitative analysis of the labour market including collecting data on the outlook of vacancies on the basis of a pre-developed methodology; (2) a multi-actor consultation; and (3) a final decision regarding the occupations to include in the list which typically lies with the government.

LSOs can be grouped into three broad categories according to the extent to which they are linked to labour migration. Firstly, in one group of countries (HU, LV, LT, MT, NL, PL, SK), LSOs identify labour shortages but are not explicitly linked to migration policy (this is the case of Occupational Barometers, for example). In a second group of countries, LSOs are explicitly developed as instruments for determining the admission of third-country nationals and are legally binding (AT, DE, EE, EL, ES, FR, HR, IE, LU, UK). Finally, in **Belgium** and **Finland**, LSOs are developed for purposes other than migration, but they are also used in order to develop aspects of labour migration policy.

There are two broad approaches to linking economic migration to labour shortages: '**the human capital' or 'labour supply' models** which seeks to attract migrants with transferable skills or other qualities (e.g. investment potential) deemed desirable for the economy but with no particular link to pre-defined shortage occupations; and a '**demand driven'** model which involves granting accelerated or simplified admission to migrants seeking employment in previously identified shortage occupations. Most Member States tend to combine elements of both approaches

In countries where the human capital model has been adopted, facilitating highly-skilled labour migration is not seen as a tool for addressing labour shortages but rather as an instrument to encourage innovation and move towards a 'knowledge economy'. This is the case in the Netherlands, for instance, where attracting and granting entry to highly-skilled migrants from third-countries is a key policy priority, but where migration policy does not refer to particular shortage occupations.

In line with the demand driven model, Member States have adopted a variety of policy measures to adjust/modulate labour migration policy in respect to shortage occupations, including exemptions from labour market tests (AT, BE, CY, DE, EE, ES, FI, FR, HR, IE, PL); exceptions to the pre-set quotas (IT, HR); access to a point-based systems for applicants who have a job offer in a shortage occupation (AT); reduced minimum income thresholds (e.g. EE, EL, IE, LV, NL and UK); facilitating access to the labour market to certain groups of third-country nationals already in the country (Germany); immediate eligibility for family reunification (e.g IE); bi-lateral agreements with specific third-countries (FR); and temporary regularisations (AT, FR).

In most countries, stakeholder consultations are an important part of the process of formulating and/or adjusting labour migration policy. In at least 12 out of the 25 countries involved in this study, formal consultative structures have been set up for this purpose (AT, BE, CZ, DE, EL, ES, FI, HU, IE, IT, LU, MT, NL), while in other countries the involvement of stakeholders is more ad hoc (CY, DE, HR, PL, SK) or have no instruments to involve multiple stakeholders (LT, LV). In particular with regard to identifying and formulating lists of shortage occupations, a range of stakeholders are consulted and involved, including different ministries and state agencies/administration (AT, EE, EL, FI, FR, IE, LV); social partners (AT, EL, ES, FR, FI, HR, HU, IE, LV); other multi-partite organisations/ institutions (FI, HU, IE) and labour market and migration experts (UK).

Seventeen Member States identified challenges and risks associated with identifying labour shortages (AT, BE, CZ, DE, EL, ES, FI, FR, IE, IT, LT, LU, LV, NL, PL, SK, UK). These challenges include limitations of existing methodologies for identifying labour shortages (BE, CZ, FI, IE, IT, LT, LV, UK) and/or external challenges in forecasting labour shortages such as rapid technological, economic, political and sociological developments on the labour market (FI, NL).

Although most Member States have instruments in place to monitor labour migration in general; in the vast majority of Member States, the impact of labour migration on shortage occupations in particular is not monitored (CY, EL, HU, LU, NL, SK), monitored only to a limited extent (BE, DE, ES) or on an ad-hoc basis (AT, DE, FI, FR). Five Member States (IE, IT, HR, MT, PL) have more comprehensive measures in place to monitor the impact of migration. These include monitoring as part of a formalised process to determine annual admission quotas (HR, IT) or Lists of Shortage Occupations (IE, MT) or only for analytical purposes (PL).

In terms of monitoring the effects of intra-EU mobility of EU nationals, although a number of data sources on the employment of mobile EU nationals exist (such as surveys, administrative data and population censuses), the take up of shortage occupations by intra-EU nationals as well as mobile third-country nationals is not specifically monitored. In most Member States, the EU-wide publishing of vacancies by the PES is a way of factoring in intra-EU mobility of EU work.

Annex 1 Glossary and abbreviations

The following terms used in the study are defined as follows:

'Circular migration' is a repetition of legal migration by the same person between two or more countries. (Source: EMN Glossary V3)

'Economic migration' refers to migration mainly for economic reasons or in order to seek material improvements to livelihood. (Source: EMN Glossary V3)

'Employee' is defined as a worker holding an explicit or implicit employment contract, which gives them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work. (Source: EMN Glossary V3)

'Employer' is considered any natural person or any legal entity, including temporary work agencies, for or under the direction and/or supervision of whom the employment is undertaken. (Source: EMN Glossary V3)

'Employment' is defined as the exercise of activities covering whatever form of labour or work regulated under national law or in accordance with established practice for or under the direction and/or supervision of an employer. (Source: EMN Glossary V3)

'Immigration quota' is defined as a quota established for and by the country, normally for the purposes of labour migration, for the entry of immigrants. (Source: EMN Glossary V3)

'Intra-corporate transferee' refers to a third-country national subject to a temporary secondment from an undertaking established outside the territory of a Member State and to which the third-country national is bound by a work contract to an entity belonging to the undertaking or to the same group of undertakings which is established inside this territory. (Source: EMN Glossary V3)

'Intra-EU mobility' is an action of persons (EU nationals or legally resident third-country nationals) undertaking their right to movement by moving from one EU Member State to another. (Source: EMN Glossary V3)

'Labour market test' a mechanism that aims to ensure that migrant workers are only admitted after employers have unsuccessfully searched for national workers, EU citizens (in EU Member States this also means EEA workers) or legally residing third-country nationals with access to the labour market according to national legislation. (Source: EMN Glossary V3)

'Labour migration' is a movement of persons from one state to another, or within their own country of residence, for the purpose of employment. (Source: EMN Glossary V3)

'Labour shortage' is a shortage or insufficiency of qualified candidates for employment (in an economy, country) (Collins Dictionary)

'Occupation' is defined as a set of jobs whose main tasks and duties are characterised by a high degree of similarity. (Source: EMN Glossary V3)

'Social partners' refers to employers' associations and trade unions forming the two sides of social dialogue (Source: European Quality Assurance in Vocational Education and Training (EQAVET); European Commission Glossary[65])

'Seasonal worker' is a third-country national who retains their principal place of residence in a third country and stays legally and temporarily in the territory of a Member State to carry out an activity dependent on the passing of the seasons, under one or more fixed-term work contracts concluded directly between that third-country national and the employer established in that Member State. (Source: EMN Glossary V3)

'Skills shortages' refers to shortages of particular skills on the labour market. Skills shortages can be cyclical and structural. On the one hand, shortages are common during periods of rapid economic growth, when unemployment is low and the pool of available workers is reduced to a minimum. However, these type of shortages tend to be overcome along the cycle. On the other hand, some structural changes, such as the adoption of new technologies, may increase the demand for certain skills that are not immediately available in the labour market, creating skills shortages even when unemployment is high. In fact, having a large pool of unemployed people provides no guarantee that employers can find appropriately skilled individuals to fill their vacancies. (Source: OECD)

'Social dumping' refers to the practice whereby workers are given pay and/or working and living conditions which are sub-standard compared to those specified by law or collective agreements in the relevant labour market, or otherwise prevalent there. (Source: EMN Glossary V3)

[65] Available at: http://www.eqavet.eu/qa/gns/glossary/s/social-partners.aspx

Abbreviations used in the text

ICT - intra-corporate transferees

LSO – List of shortage occupations

PES – Public Employment Service

TCN – third-country national

Annex 2 Comparative tables of list of shortage occupations and other instruments for identifying labour shortages

Table A2.1 List of shortage occupations (LSOs)

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
AT	**Yes** (1) Regulation for Skilled Workers (2)Regulation for the Overdrawing of the Federal Maximum Number for the Employment of Skilled Workers	Yes	(1) Shortage occupations are defined on an annual basis based on the ratio of job vacancies to job-seekers for each occupation (applicant-to-vacancy ratio) (2) Allows work permits to be granted to EU nationals who fall under transitional provisions (currently applied to Croatian nationals), provided they have specialised training in certain occupations.	(1)Ratio of job vacancies to job-seekers (applicant-to-vacancy ratio) based on national classification (classification of occupations by Public Employment Service Austria) (2)Occupations based on National classification (classification of occupations by Public Employment Service Austria)	(1) Public Employment Service Austria (a committee of the administrative board), Federal Ministry of Labour, Social Affairs and Consumer Protection, Federal Ministry of Science, Research and Economy (2) Federal Ministry of Labour, Social Affairs and Consumer Protection	(1) National level (federal government); (2) National level (federal government); the minister potentially has the option of introducing geographic restrictions
BE	**Yes**	Yes, but only very partially for one category of workers (TCNs long-term residents from another member state) LSOs serve, *inter alia,* for PES policy-making and for education planning – i.e. The lists serve different training providers to propose new forms of training or to adapt the content of existing training modules	A combination of statistical methods, internal and external consultation	Occupations Wallonia uses Code ROME v2 5 digits; Flanders uses its own classification which is broadly based on ISCO 08; Brussels uses its own classification	Regional public employment services	Regional level
CY	**No**	N/a	N/a	N/a	N/a	N/a
CZ	**No**	N/a	N/a	N/a	N/a	N/a
DE	**Yes** "Positive list" of the Federal Employment Agency	Yes, but only partially. However, the list does not include quotas or quantitative targets. It is used as a tool to accelerate the admission of non-academic third-country nationals to the labour market; for occupations mentioned on the list the priority examination is waived.	On the basis of the bottleneck analysis, conducted by the Federal Employment Agency (BA) twice a year, the focus is on identifying business sectors in which migrant labour is required.	(i) Ratio of job vacancies to job-seekers (applicant-to-vacancy ratio). Duration of vacancy (in relation to average and absolute increase of days) (ii) Based on national Classification of Occupations (KldB 2010) which is highly compatible with ISCO-08.	Federal Employment Agency in coordination with the Ministry of Labour and Social Affairs	National level
EE	**Yes** (as of 1st January 2016)	Yes, this tool aims to identify shortages for the whole workforce (including national/EU) and proposes a list of occupations where immigrants can apply a residence permit for employment on a simplified way.	Different analyses will be used to create the list of shortage occupations. Mainly the Labour Demand Forecast and qualitative labour needs analysis, and possibly other analyses (sector specific, employers' interviews, vacancies etc.) are used to compile the list.	Quantitative analysis on labour demand by sectors, professions (based on ISCO-08) and levels of education	The list is compiled in cooperation with different ministries: Ministry of Economic Affairs and Communications, Ministry of Social Affairs, Ministry of Education and Research, Ministry of Culture and submitted by the Ministry of Interior to the Government for approval	National level
EL	**Yes**	Yes. It focuses on identifying	Among the criteria taken into	Occupations	The competent Ministers (Interior and	Mainly at the level of

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
		the needs for admission of migrants for work.	consideration is the work availability by nationals, EU citizens or legally residing TCNs per specialization and the unemployment percentages per employment sector.		Administrative Reconstruction, Foreign Affairs, Economy Infrastructure Shipping and Tourism, Labour and Social Solidarity) in consultation with the Regions and the employers organisations	Regions and Regional Unities
ES	**Yes**	It focuses exclusively on the identifying the need for migration labour	This tool is based on the info available on job vacancies advertised by public employment services and statistics related to job seekers	Occupations; "La clasificación nacional de ocupaciones" within the framework of ISCO-08	The public employment services	Regional level
FI	**Yes** (1) Occupational barometer (2) Regional work permit policies of the Centres for Economic Development, Transport and the Environment	(1) The occupational barometer is not directly used for determining the need for labour migration, but influences the regional work permit policies. (2) The work permit policies specifically define for which professional fields labour can be hired from outside the EU/ EEA. The Employment and Economic Development Offices make their preliminary decisions on residence permits for employed persons on the basis of the regional work permit policies.	(1) The occupational barometer is a labour administration tool with which labour supply and demand are estimated in approximately 200 occupations and in different regions. It also provides a forecast of approximately six months. (2) The Centres for Economic Development, Transport and the Environment prepare work permit policies by region on the basis of statistics, the occupational barometer and tripartite negotiations.	(1) The occupational barometer is prepared on the level of specific occupations. The ISCO classification (at the four-digit level) has been used since July 2014. (2) The work permit policies are prepared on the level of professional fields. The ISCO classification has been used since July 2014.	The occupational barometer and the work permit policies are tools used by labour administration (the Ministry of Employment and the Economy, the Centres for Economic Development, Transport and the Environment, the Employment and Economic Development Offices).	(1) The occupational barometer is prepared by each Employment and Economic Development Office (15 offices) in their region, the sub-regional unit (67 units) being the most detailed level. (2) Regional level
FR	**Yes** (1) National list of 30 occupations set by Decree of 18 January 2008 (2) List of occupations set by bilateral agreement	Yes	(1) This list of occupations marked by tensions and recruitment difficulties was reached after consultation with the social partners and was the result of preparatory work and a range of indicators. (2) The lists set by bilateral agreement were defined on the basis of shortage occupations for nationals of new Member States subject to transitional provisions and take account of the particularities of each country.	(1) These lists represent occupations identified by ROME which are connected to a job description for each code. (2) The Pôle Emploi wording is used to draft these lists. It is close to the International Standard Classification of Occupations (ISCO).	These lists are used by the Prefects to process work permit requests.	(1) This list of 30 occupations for third-country nationals is divided on the regional level depending on the particularities of the local labour market and the employment area. Six occupations apply to the whole of metropolitan France. (2) National level
HR	**Yes**	Yes, exclusively	In order to prepare an official proposal for defining the total number of work permits for foreigners, the Croatian Employment Service provides the analysis of the reported vacancies in the labour market, the number of available unemployed persons registered at the CES, the number of persons employed in the CES	Occupations and sectors based on National classification	Croatian Employment Service The Government uses this mechanism to produce information on skill shortages.	National level

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
			during the period of one year, the results of the Employers' survey, the number of persons referred to education which is based on the ALMP measure "Training of the unemployed", the labour market analyses of all regional offices, as well as the number of issued work permits for foreigners for the previous reporting year compared to the total forecasted annual quota of work permits for foreigners for the previous year.			
HU	**Yes**	No, the list is primarily used to support the professional educational scholarships for occupations affected by shortages *See also Annex A2.2. Sector analysis for the List of shortage occupations in the healthcare sector*	The County Development and Education Committee (CDEC) decides on the list of shortage occupations on the basis of 'the demands of the economy, the situation of the labour market and the data on vocational training in the country, in the region and in the county/capital'.	The list is based on specific occupations that are affected by a shortage, but which are strongly connected to economic sectors.	County Development and Education Committee (CDEC)	Regional The level of analysis is based on the division of Hungary into administrative counties. The capital city of Budapest is treated separately.
IE	**Yes** (1) The Highly Skilled Eligible Occupations List (HSEOL) and; (2) The list contained in the *National Skills Bulletin* (NSB)		(1) The HSEOL is focused on identifying the need for non-EEA workers in relation to occupations with skill shortages (2) the NSB aims to identify skills shortages in the Irish labour market (and has a component focusing on migration	Occupations based on the Standard Occupational Classification (SOC) system (2010)	(1) Department of Jobs, Enterprise and Innovation (2) Produced by the Skills and Labour Market Research Unit (SLMRU) on the behalf of the Expert Group for Future Skills Needs (EGFSN)	National level
IT	**No**	N/a	N/a	N/a	N/a	N/a
LV	**Yes**	No	Short-term forecasting Reports on labour market surpluses and shortages are prepared twice a year by the public employment service - State Employment Agency.	Sectoral level (but only limited numbers of sectors is analysed); Occupations are classified according to ISCO-08 (four digit aggregates), but for the skills no generalised classification is applied; Level of education.	State Employment Agency	National and regional level
LU	**Yes** It is mentioned in the amended Grandducal regulation of 26 September 2008. However, this instrument has not been used until now.	Yes. It is focused on identifying the sectors in which migrant labour is required.	This instrument can be applied for jobs in occupations belonging to groups 1 and 2 of ISCO-08 for which a particular need for workers from third countries is recognised by the government.	Groups 1 and 2 of ISCO-08	The Ministry in charge of immigration in collaboration with the Ministry of Labour Employment and Solidarity Economy and the Ministry of Economy	National level
LT	**Yes**	No The list is currently no longer used as a tool to facilitate the entry of foreign workers.	The main mechanism used to determine labour shortages is the analysis of registered labour supply (unemployed persons) and demand (vacancies). The list of	Sectors and occupations based on a national classification	Lithuanian Labour Exchange	National and regional level

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
			understaffed occupations is drawn up based on the following criteria: high demand for labour; labour demand is twice higher than labour supply; difficulties in filling vacancies (a job has been vacant for more than 3 months or there has been no labour supply meeting the required skills for more than 3 months); analysis of occupations of foreigners employed in Lithuania. In preparing this list, individual territorial and economic parameters as well as other general parameters are measured			
MT	**Yes**	Yes	Number of vacancies in particular sectors showing labour market shortage; Competences of registering unemployed in comparison to those of TCNs	Number of vacancies in particular sectors showing labour market shortage	Employment and Training Corporation (Malta's PES)	National level
NL	**Yes** (1)Labour market tension meter (2)Shortage occupations	No	(1) The labour market tension meter is used for short-term shortages and is calculated by dividing the number of open job vacancies in the total job vacancy market by the number of UWV-registered unemployed job seekers who have been unemployed for less than six months. (2) When the tension meter indicates that the labour market for the particular occupation is tight or very tight, this shows an initial indication of shortages. Shortage occupations occur when there is a relatively high demand for personnel in relation to the available supply of job seekers.	Occupations. Tension indicator can be converted to ISCO	Employee Insurance Agency (UWV)	(1) Tension meter on a regional level (2)Shortage occupations: national (in the long-term also regional)
PL	**Yes**	Only indirectly, when preparing some analyses	In line with the current methodology of shortage and surplus occupations, the main indicator used to classify a given occupation as shortage, balanced or surplus occupation is the occupation surplus (shortage) intensity indicator, expressed as the number of submitted job offers for an occupation in a given reporting period divided by the number of registered unemployed who represent the occupation in a given reporting period.	Occupations, 4-digit level; sections of activity based on national classification	Ministry of Labour and Social Policy, public employment services	Local, regional and national level

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
			In 2015 new indicators have been implemented: a) job offer availability indicator, expressed as the average monthly number of the registered unemployed representing an occupation in a given reporting period divided by the average monthly number of available job offers for the occupation; b) long-term unemployment indicator, expressed as the number of long-term unemployed representing an occupation at the end of the reporting period divided by the total number of the registered unemployed representing the occupation at period-end; c) unemployment liquidity indicator, expressed as the outflow of the unemployed representing an occupation in a given period divided by the inflow of the unemployed representing the occupation in the same period. Additionally, once a year enterprise surveys are conducted by local (poviat) labour offices and twice a year - studies on job offers published on the Internet are conducted by the regional (voivodeship) labour offices.			
PT	**No**	N/a	N/a	N/a	N/a	N/a
SE	**Yes**	Partly Shortage lists are compiled for the purpose of evaluation and forecasting. The sole purpose of this shortage list is to serve as a basis for the decision whether an applicant in a particular profession applied for can be granted a permit without leaving the country.	Shortage lists (Shortage index) are based on data and assessments compiled from enterprise-based surveys (interviews with 12 000 employers, mainly in the private sector). Long term occupational projections.	Occupations, 4-digit level; The Swedish national classification, SSYK 96, is used (which is based on ISCO-88).	Public Employment Agency	National and regional focus

MS	Are LSOs used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis and classification	Responsible organisations	Geographical level (national, regional, municipal)
SI	**No**	This is a project of Employment Service of Slovenia *Predictor of Employment* [*Napovednik Zaposlovanja*] (for the period March 2014 – November 2015). The project was based on representative surveys among employers to allow short-term forecasting of future labour demand and thus a better balance between supply and demand on the labour market.	The result of the project is the lists of occupations for which individual companies are looking for workers or record the lack of suitable candidates.	Employment Service of Slovenia.	National level.	This is a project of Employment Service of Slovenia *Predictor of Employment* [*Napovednik Zaposlovanja*] (for the period March 2014 – November 2015). The project was based on representative surveys among employers to allow short-term forecasting of future labour demand and thus a better balance between supply and demand on the labour market.
SK	**Yes (monitoring of labour force deficits)**	No	At present, Slovakia only monitors labour deficit through agents of the vacancies recorded by labour offices. These figures, however, are incomplete, as employers are not required to report vacancies to the respective labour office. The employer is obliged to report vacancies to the Central Office of Labour, Social Affairs and Family or to the labour office, only in case the employer is willing to employ a third-country national.	N/a	Labour offices, Central Office of Labour, Social Affairs and Family	N/a
UK	**Yes**	Yes	The UK shortage occupation list applies to Tier 2 (General) migrants, classified as skilled workers. Top-down and bottom-up methodologies are applied to each term. National data from the Labour Force Survey, Annual Survey of Hours and Earnings and UK Commission's Employers Skills Survey are used for the top-down approach. Evidence submitted by employers, trades unions and other stakeholders are used for the bottom-up approach.	The shortage occupation list is defined under Standard Occupational Classification (SOC) levels. The most recent version of this is SOC2010. SOC2010 is broken down into 9 major groups, 25 sub-major groups, 90 minor groups and 369 unit groups (the highest resolution). Similarly to ISCO-08, the highest resolution for SOC2010 is a four digit code, equivalent to occupational group.	The Migration Advisory Committee (MAC) has been regularly tasked with recommending occupations for the shortage occupation list (SOL) since its inception in 2008. The MAC is a non-departmental public body made up of economists and migration experts that provides migration advice to the Government. The shortage occupation list is owned by the Government. The MAC recommends the list composition, but the Government is not obligated to accept the MAC's recommendations.	UK-wide shortage occupation list with additional shortages applicable to Scotland only occupation list, to reflect differing labour market needs compared to the rest of the UK.

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries.

Table A2.2 Sector analysis

MS	Are sector analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
AT	**Yes** Industry-occupation matrices	No	Used as an integral component of econometric forecast models; provides the basis for medium and long-term forecasts of changes in labour needs by occupation and industry	Occupations, incl. qualifications, industries; National classification (classification of occupations by Public Employment Service Austria)	Austrian Institute of Economic Research	National (federal government) and in some cases regional level (e.g. the provinces of Upper Austria and Styria)
BE	**Yes**	No	Consists of consultations with sector representatives: when the statistical phase of the drafting of the annual labour shortages lists is completed, the regions consult sector representatives for additional information and refinement of the selection. This input is integrated to finalise the LSOs.	Sector level	Regional PES	Regional
CY	**No**	N/a	N/a	N/a	N/a	N/a
CZ	**No**	N/a	N/a	N/a	N/a	N/a
DE	**Yes**, for example for health or STEM (MINT) professions.	Yes, but only partially. Section 2 subsection 2 of the Ordinance on the admission of foreigners for the purpose of taking up employment (BeschV) explicitly mentions ISCO-08 occupation groups 21, 221 and 25 as identified shortage occupations. For the mentioned occupations the priority examination for third-country nationals is waived.	(i) Regional or sector specific analyses are part of the bottleneck analysis that is conducted by the Federal Employment Agency twice a year. Quotas or quantitative targets are not included. On the basis of the applicant-to-vacancy ratio parameters are similar to that of the national analysis. (ii) Private institutions and associations of interests conduct own studies and sector analyses in which quotas and quantitative targets could be mentioned.	Occupations, skills, level of qualifications; national Classification of Occupations (KldB 2010)	Federal Employment Agency in coordination with the Ministry of Labour and Social Affairs	National and Regional (Federal Laender)
EE	**Yes**	No, used for identifying the overall labour market shortages, not directly linked to labour migration			Ministry of Economic Affairs and Communications, Ministry of Social Affairs, Estonian Qualifications Authority	National
EL	**No**	N/a	N/a	N/a	N/a	N/a
ES	It is envisaged in the Law 14/2013, although it has never been used	Yes	N/a	N/a	Ministry of Employment and Social Security and Ministry of Economy	N/a
FI	**Yes** (1) "The sufficiency of labour in the social and health care sector now and in the future", Ministry of	(1) Not directly. The conclusions of the report state that more extensive utilisation of technology, the improvement of the sector's	(1) The report reviews the current overview of the situation as well as the short-term and long-term outlook in the social and health care sector. Forecasting makes use of the	(1) The social and health care sector, the professional field and occupations. The ISCO classification. (2) Eight sector groups:	(1)The Ministry of Employment and the Economy (2) The Ministry of	(1) National level and the regional level of the Centres for Economic Development, Transport and the

MS	Are sector analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
	Employment and the Economy reports[66] (2) Ministry of Employment and the Economy's sector reports[67]	attractiveness and the quality of working life, the renewal of working processes, the development of new service concepts and the reform of task structures according to service needs will play key roles in ensuring the supply of skilled labour. In case the above does not happen, preparations must be made to fulfil labour demand with other means, too, such as by recruiting skilled workers for the sector from abroad. (2) No, the sector reports are not used for determining the needs for labour migration.	occupational barometer, the ForeAmmatti service and VATT's studies, among others. (2) The sector reports are an annually updated publication series on the current situation and the future outlook for business in various sectors. One dimension in the sector reports is labour, and when estimating its availability, the occupational barometer is taken into account. The starting point for the sector report publication series is to gather and combine materials from different sources into sector-specific basic information packages that offer experts' views to support decision making in small and medium-sized enterprises.	- food industry, - carpentry products and wooden houses, - renewable energy, - mining industry, - tourist entertainment services, - social and health care services, - private employment services and - creative sectors.	Employment and the Economy and the Centres for Economic Development, Transport and the Environment	Environment. (2) National level
FR	**Yes** (1) The Acemo survey (2) The DARES report on job offers collected by Pôle Emploi on job seekers registered by Pôle Emploi. (3) The COE (French Employment Counselling and Advisory Board) report	No	(1) The Acemo survey is a quarterly survey conducted by DARES into all competing sectors (excluding agriculture and the public sector) in metropolitan France. It calculates changes in wages, employment and length of employment. (2) This publication compares job offers recorded by Pôle Emploi and job seekers recorded by Pôle Emploi. (3) The COE report takes stock of the labour market situation in France by presenting statistics which describe unfilled vacancies and recruitment difficulties by occupation and sector of activity	(1) The Acemo survey, the DARES report and the COE report look at sectors of activity in relation to occupational areas. (2) The FAP classification is used. This FAP list combines the ROME directory used by Pôle Emploi for occupations and the socio professional categories used by INSEE	They are used by occupational sectors and businesses, as well as in the public sector (particularly by the Ministry for Labour, Employment, Vocational Training and Social Dialogue) to have an overview of the labour market.	National level
HR	**No**	N/a	N/a	N/a	N/a	N/a
HU	**Yes** (for the healthcare sector)	No	A completely separate field, in which shortage occupations are continuously collected and monitored, is healthcare. In	Specific sector (healthcare)	In Hungary, data on the situation of healthcare workers is collected by a number of bodies and	Regional

66 Sosiaali- ja terveysalan työvoiman riittävyys nyt ja tulevaisuudessa, Eija-Leena Koponen, Ministry of Employment and the Economy publications 13/2015: http://www.tem.fi/files/42288/TEMraportti_13_2015_web_27022015.pdf The report is an update to the report Mistä tekijät sosiaali- ja terveysalalle – työvoimatarpeen ja –tarjonnan kehitys vuoteen 2015 (How to find workers for the social and health sector – development of the demand and supply of labour by 2015), completed in the autumn of 2012, with the latest information available.

67 www.temtoimialapalvelu.fi/toimialaraportit

MS	Are sector analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			Hungary, concerning the determination of shortage occupations in the health care sector, there is an applicable legal regulation which pertains exclusively to the specialised training of doctors. The list of shortage occupations for doctors is published by the minister in charge of the health care system since 2010. Similarly to the logic prevailing in the system of vocational trainings, the categorisation as 'shortage occupation' results in monthly financial benefits for those who enter specialised trainings in these shortage occupations (this is a kind of scholarship), based on the regulations presently in effect. Data on the situation of healthcare workers is collected by a number of bodies and authorities.		authorities. Ministry of Healthcare publishes the List	
IE	**Yes** (1) The analysis contained in the *National Skills Bulletin* (NSB). (2) In-depth sectoral studies undertaken by the EGFSN.	Yes	(1) The annual NSB identifies skill shortages by sector and broader occupation groups. The analysis is based primarily on the data held in the SLMRU National Skills Database, although it also draws on information from the EGFSN's sectoral studies and other relevant research. (2) The EGFSN publishes sectoral studies e.g. *Assessing the Demand for Big Data and Analytics Skills, 2013 – 2020*	(1) NSB: Analyses the labour market at occupational level. The Standard Occupational Classification system (SOC 2010) is used which is an international classification system that can be mapped to ISCO-88. (2) EGFSN sectoral studies for specific sectors; including Freight Transport, Distribution and Logistics Sector, ICT, Manufacturing etc. Such reports are in-depth and specific to needs. As such they may provide multi-layered analysis of skills, occupations, sectors, professions, level of qualifications. EGFSN sectoral studies: Where a classification system is relevant SOC is used.	Expert Group on Future Skills Needs (EGFSN)	National
IT	**No**	N/a	N/a	N/a	N/a	N/a
LV	**Yes**	No	In-depth interviews with sectoral employer organisations as part of the short-term forecasting. Selected organisations are interviewed after employer surveys.	Level of analysis: -sector; -occupations- ISCO-08 (four digit aggregates) is applied -skills	State Employment Agency	National level

MS	Are sector analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
				-qualifications		
LU	**Yes**	No. It is a tool, which aims to identify shortages in the concerned sectors and it does not address the issue of migrant labour.	The objective is to determine the labour shortages in the sector in order to evaluate the perspectives of employability and the creation of employment in the different trades. In the 2nd semester of 2015 the Chamber of Trades and Crafts plans to launch a survey to determine the labour shortages in the Trades and Crafts sector.	Sector	Luxembourg Chamber of Trades and Crafts	National level
LT	**No**	N/a	N/a	N/a	N/a	N/a
MT	**No**	N/a	N/a	N/a	N/a	N/a
NL	**Yes**	No	Sector descriptions outline the shortages and surpluses per sector. The sector descriptions provide a current picture of the shortages and surpluses in the labour market	Occupational group	Employee Insurance Agency) UWV (UWV does this on instructions from social partners and by making use of the labour market analyses of the sectors.)	National
PL	**Yes**,	Yes, but to a very limited extent. Expert opinions commissioned by individual ministries, such as the expert opinion on seasonal work in agriculture. So far – without actual influence on the migration policy in the area of economic migration	Expert opinions commissioned by individual ministries	Sectors (e.g. agriculture)	Institute of Agricultural and Food Economics commissioned by Ministry of Agriculture and Rural Economy	National
PT	**No**	N/a	N/a	N/a	N/a	N/a
SE	**Yes**	No	Enterprise-based surveys	Certain occupations	The Public Employment Agency, Statistics Sweden (SCB), Ad-hoc reports by social partners	National and regional focus
SI	**No**	N/a	N/a	N/a	N/a	N/a
SK	**Partly**. Sector analyses are not used much in Slovakia, with the exception of the automotive industry.	No	N/a	Under the project Forecasting labour market developments implemented by the Central Office of Labour, Social Affairs and Family, then balance/imbalance between labour supply and labour demand is monitored by means of 2-digit SK NACE classification, rev. 2.	N/a	N/a
UK	**Yes**	Yes	Sector analysis is incorporated within the top-down and bottom-up analysis conducted by the Migration Advisory Committee (MAC) for the shortage occupation list and	(1) Sector analysis is conducted for the top-down analysis at a four digit SOC2010 level, equivalent to occupational group. The	Migration Advisory Committee (MAC)	National level

MS	Are sector analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			therefore there is no clear distinction between the shortage occupation lists and sector analysis. Broad sectors previously considered by the MAC are health (February 2013, 2015), engineering (February 2013) and digital technology (February 2015), along with specific occupational groups and job titles.	bottom-up analysis is conducted at the job title level. For example, top-down analysis is conducted on SOC2010 "2211 Medical Practitioners", whereas bottom-up analysis applies to emergency medicine, clinical radiology, and old age psychiatry consultants. 2) Although not an international classification, SOC2010 does align well to ISCO-08 and mapping across between the two is available via the Office for National Statistics, where 67% of SOC2010 codes are successfully mapped across to ISCO-08 at the 4-digit level, with the remainder matched at the 3-digit level.		

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries.

Table A2.3 Employer surveys

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
AT	**Yes** Job vacancy survey	No	Used as instrument to identify labour shortages. A survey is taken of a sample of companies. Participation is voluntary	(1) Details collected on each vacancy: Name of occupation; Minimal level of school education preferred; Apprenticeship (yes/no); Number of working hours; Seasonal job (yes/no); How long a candidate has been sought; Expected gross monthly income (2) International classification	Statistics Austria	National level (federal government)
BE	**Yes**	No	Statistics collected from individual employers		Regional PES	Regional
CY	**No**	N/a	N/a	N/a	N/a	N/a
CZ	**No**	N/a	N/a	N/a	N/a	N/a
DE	**Yes**, The Federal Employment Agency uses the survey on national job vacancies carried out by the Institute for Employment Research (IAB) for its analysis on skilled labour bottlenecks.	No, it is only used as a tool to identify labour shortages and labour needs.	Covers all companies and administrations, with at least one employee subject toocial security contributions A disproportionate, stratified, random sample of around 75,000 companies and administrations is drawn from this survey population once a year and is broken down into 28 sectors of the economy, eight categories of company sizes and the 16 Federal Laender.	• Name of occupation • Number of employees/ apprenticeships • Level of qualification • Income • Labour needs over the last twelve months • Time for searching job candidates, etc.	Institute for Employment Research	National level
EE	**Yes**	No, used for identifying the overall labour market shortages, not linked to labour immigration.	Interviewing and questioning the employers.	Occupations, sectors.	Ministry of Social Affairs, Ministry of Economic Affairs and Communication	National
EL	**No**	N/a	N/a	N/a	N/a	N/a
ES	**No**	N/a	N/a	N/a	N/a	N/a
FI	**Yes** I. Statistics Finland's employer interviews on the assignment by the Ministry of Employment and the Economy II. Statistics Finland's Job vacancy survey III. Local Government Employers (KT)'s skills and labour demand survey, report on the skills and labour needs of the municipalities and joint	I. The employer interviews are not directly used when determining the need for labour migration II. The survey is not directly used when determining the need for labour migration. III. The survey is not used for determining the needs for labour	I. The data collection for the study is based on a sample of enterprise and public entity sites extracted from Statistics Finland's Register of Enterprises and Establishments. The sample size is approximately 10,000 sites per year, distributed evenly across quarters. The answers for the survey are provided with an online form or a telephone interview. The topics investigated	I. (1) Main sector levels, main sectors, (skills through the reasons for recruitment problems) (2) The employer interviews are conducted according to the industrial classification (not ISCO). II. (1) Job vacancies are categorised by sector group, sector and site size. (2) Information about the professional level is not	I. Statistics Finland produces on the assignment by MEE, used in plans at the regional level. II. Statistics Finland produces, published on the website for general use. III. Municipalities and joint municipal authorities as well as Local Government Employers (KT), the central employers' organisation representing them. Information is taken into account when anticipating training and labour needs.	I. The Centre for Economic Development, Transport and the Environment regions. II. The results are published at the major region level (classification of

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
	municipal authorities in 2014 IV. Local Government Employers (KT)'s report on the labour situation in certain social and health care occupational groups in the municipal sector in 2012	migration, although local government employers are requested to provide information about foreign-language personnel employed by them and an estimate of the development of the number of such personnel. IV. Indirectly, can be used when justifying labour migration within the scope of the determination of the availability of labour	include how many of the sites have experienced recruitment problems and remained without labour. II. The data collection for the study is based on a sample of enterprise and public entity sites extracted from the Register of Enterprises and Establishments. The sample size is approximately 10,000 sites per year, distributed evenly across quarters. The answers for the survey are provided with an online form or a telephone interview. The sites are requested to provide information about the number of job vacancies and the difficulties in filling them, among other topics. III. Every other year, local government employers, that is, municipalities and joint municipal authorities, are enquired with an electronic form about skills and recruitment needs in the municipal sector. IV. Every few years, local government employers, that is, municipalities and joint municipal authorities, are enquired about personnel shortages in certain occupational groups (unfilled job vacancies). There is time series follow-up for the years 2004–2012	included in the basic survey publication. The material contains information with ISCO-08-based classification. III. (1) The recruitment needs of local government employers are charted by training field and level. (2) - IV. -	IV. Municipalities and joint municipal authorities as well as KT, the central employers' organisation representing them. Information is taken into account when anticipating the number of places available for new students at educational institutions. The survey is planned together with the Ministry of Social Affairs and Health.	major regions 2012) III. Municipalities and joint municipal authorities. IV. Municipalities and joint municipal authorities.
FR	**Yes** a) The MEDEF TEC observatory b) The Manpower Group Talent Shortage Survey c) The Pôle Emploi BMO survey	No	a) Each quarter, the MEDEF TEC observatory surveys around 42,000 businesses to identify recruitment difficulties and needs by occupation, to understand the difficulties encountered, and to identify the skills needed. b) Every year, the Manpower Group surveys around 40,000 employers in 42 countries and regions to identify skills shortages and the human resource policies which have been established. c) Every year, Pôle Emploi sends	a) (1) The MEDEF observatory looks at sectors of activity and occupations by region. (2) The FAP classification is used, adjusted to the private sector in question with the exception of agriculture, the three public sector areas (state government, local government and hospital services), private individuals, associations and independent workers. b) (1) The Manpower Group survey looks at sectors of	a) The MEDEF TEC observatory is aimed at regional MEDEF groupings and at business members of MEDEF. b) The Manpower Group survey is aimed at employers. c) The Pôle Emploi BMO survey is used by Pôle Emploi and by the General Directorate for Employment and Vocational Training (DGEFP).	a) The MEDEF observatory is regional in scope. b) The Manpower Group survey is international in scope (42 countries). c) The Pôle Emploi BMO survey is national.

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			a questionnaire to more than 1.6 million businesses in the private and agricultural sectors, as well as to part of the public sector to understand their recruitment needs and hence anticipate recruitment difficulties before they arise.	activity and occupations on the national scale in 42 countries. (2) The classification used is specific to the Manpower Group and includes 200 occupations. c) (1) Pôle Emploi looks at sectors of activity and occupations by region and employment area for the whole of France (22 metropolitan regions and five overseas regions). (2) The FAP classification is used by Pôle Emploi.		
HR	**Yes**	No It is a tool to identify bottleneck occupations for the whole workforce	A sample of employers is surveyed by the CES once a year. They are asked whether they faced difficulties in filling vacancies due to lack of qualified workers.	The national classification of occupations consistent with ISCO-08 is used.	The Croatian Employment Service publishes the results of the survey.	National and regional level
HU	**Yes**	No	In addition to the determination of shortage occupations and to the professional educational scholarship system, the National Employment Service (NES) is also able to identify a couple of more occupational categories where finding a job for a job seeker poses a challenge or where employers face a long-term labour shortage, based on its nationwide database, where the placement of workers is difficult, or in which. These are, in principle, individual occupations, which are officially not qualified as shortage-occupations. The representative of the labour authority of the county office is member of the CDTC, however, when the county development and training committee (hereinafter referred to as CDTC) brings a decision on the county shortage-occupations, the premium can avail itself of the knowledge of the NES.			
IE	**No**	N/a	N/a	N/a	N/a	N/a

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
	The Skills and Labour Market Research Unit favours a multifaceted approach to estimating vacancies over a large-scale survey of employers, because the latter is expensive and it typically takes too long before results are available. Although IE doesn't have an employer survey designed specifically for identification of skill shortages, questions on skills issue are included in the employer survey designed for employer views on Irish graduates.					
IT	**Yes**	No	The VELA survey measures vacancies, occupational stocks and flows, worked hours and paid hours in enterprises with 10-499 employees in industry , distribution services or business services (sections B-N of the Ateco 2007 classification) and in the enterprises with at least 10 employees providing social or personal services (sections P-S of Ateco 2007). Data are broken down by sector of economic activity (Ateco 2007) and by geographical distribution (northern, central and southern Italy and Islands).	Vacancies	This survey is organized in accordance with Regulation (EC) No 453/2008 of the European Parliament and of the Council of 23 April 2008 on quarterly statistics on Community job vacancies. This survey is conducted by the Italian National Institute of Statistics and the results are made public in a quarterly publication, which is available from the site: http://www.istat.it/it/archivio/138419	The survey units are enterprises with at least 10 employees operating in the industrial or in some service sectors drawn from the Statistical Register of Active Enterprises (ASIA). The geographical level consists of 3 regions: northern, central and southern Italy.
LV	**Yes**	No	Quota sampling and stratified sampling methods are used to create representative sample, considering sector, size of enterprise and region of the enterprise. CATI and CAWI8 techniques are applied for interviews. (2556 employers were interviewed for preparation of short-term forecast for 2nd semester of year 2014). Data are weighted for statistical analysis.	Size of enterprise (by number of employees) Region Sector Occupational group Level of education	State Employment Agency	National and regional
LU	**Yes** (1)A survey on qualifications needed in the future in the Information and Communication (ICT) sector.	(1) No, but can be used for migration purposes too. (2) No, but can be used for migration	(1) The survey is conducted every two years and targets industrial, financial and commercial enterprises for their hiring projections in the	(1)The following sectors are covered by this survey: -construction -financial services -commerce and services to	(1) Chamber of Commerce through the Luxembourg School for Finance, the Ministry of National Education, the Ministry of Higher Education and Research, the Ministry of Labour, Employment and Social and Solidarity	National

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
	(2) Survey targeting industrial, construction and public work enterprises for their hiring projections in the following two years	purposes too.	following two years. (2)The survey is conducted every two years and targets industrial, construction and public work enterprises for their hiring projections in the following two years.	enterprises - manufacturing industry The choice of professions is based on the nomenclatures of jobs on IT systems (2011). No. The ISCO classification is not used in this survey (2) The following sectors are covered by this survey: -construction -industry -public works Not all branches of the industry and the construction sector, as defined by the NACE codification, are included	Economy and the ADEM (2) FEDIL	
LT	**Yes**	No	Before drawing up a list of shortage occupations, labour exchange officials regularly meet with employers' associations. During the meetings, the employers' associations express their position on the shortage of certain occupations in the represented sectors, discuss the key requirements for understaffed occupations and analyse opportunities for developing the necessary skills from among unemployed workers through vocational training. The meetings are also attended by trade union representatives, who also express opinions on the list of shortage occupations.	Occupations, sectors	Lithuanian Labour Exchange	National, regional and municipal level
MT	**Yes**	Yes	A Questionnaire is used to identify shortages for the whole workforce	1. Occupations, skills, qualifications & competences 2. International classification	Employment and Training Corporation (Malta's PES)	National
NL	**Yes** (1) Job vacancies in the Netherlands (2) The future of flex-personnel	No	(1) Two-yearly survey among businesses to identify the demand side of the labour market. (2) More than 900 businesses from 9 sectors are asked which flexibility measures they apply, what is the scope of their flexible shell, what their policy is	(1) Sectors and Occupation Classifications (2) Sectors	(1) UWV (2) Federation of Private Employment Agencies (ABU)	National and regional (UWV district)

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			on that level and what developments they expect.			
PL	**Yes** (1) a research project Study of Human Capital in Poland since 2008 on the professional competence of Poles and changes on the labour market are monitored, including the employment needs of Polish employers. (2) ManpowerGroup reports entitled Talent Shortage	No	(1) The surveyed employers were asked about recruitment problems, the impact of shortage of employees with sought-after qualifications on their companies and about strategies of companies in response to this problem. Telephone interviews with employers and an analysis of published job offers. (2) The opinions of Polish employers are used towards preparing subsequent editions of ManpowerGroup reports	Self-employed and entities from several sections of the Polish Classification of Activity (PKD), such as agriculture, were excluded from the population of employers under analysis. We used the ISCO-O8 classification of occupations; next, information on individual occupations was disaggregated to major groups that include nine general occupation groups and to sub-major groups that cover 38 more specific occupation groups.	1) Polish Agency for Enterprise Development in cooperation with the Jagiellonian University 2) The ManpowerGroup	National
PT	**No**	N/a	N/a	N/a	N/a	N/a
SE	**Yes**	No	E.g. SCB:s Job Vacancy Survey and Labour market Tendency Survey, in addition to other surveys mentioned above under "Shortage lists" (*See Table A2.1.)*	Educational programmes (SUN, which is based on ISCED), business sector	The Public Employment Agency, Statistics Sweden (SCB), The National Institute of Economic Research (NIER)	National and regional
SI	**No**	N/a	N/a	N/a	N/a	N/a
SK	This tool is not a systematic one, as there is no system of data collection from employers on their future labour demand. Certain pilot activities have been performed under several projects where employers were interviewed by means of qualitative sample surveys conducted among employers	No	N/a	N/a	N/a	N/a
UK	Yes (1) Employer Skills Survey (ESS) (2) ONS Vacancy Survey	(1) Yes (2) No	(1) As part of the Migration Analysis Committee's (MAC) analysis of shortage occupations, the top-down analysis involves acquiring data from the UK Commission for Employment and Skills. The survey was first conducted at UK-wide level in 2011, developing from a series of legacy surveys conducted in each of the countries of the UK (England, Northern Ireland, Scotland, Wales) during the	(1) Data are analysed at a four digit SOC2010 level, equivalent to occupational group. Although not an international classification, SOC2010 does align well to ISCO-08 and mapping across between the two is available via the Office for National Statistics, where 67% of SOC2010 codes are successfully mapped across to ISCO-08 at the 4-digit level, with the remainder	(1) The Migration Advisory Committee (MAC) use the data from the UK Commission for Employment and Skills Employer Skills Survey (ESS) as part of their analysis to determine the UK's shortage occupation list. (2) None.	(1) UK-wide employer survey. (2) Great Britain. Northern Ireland businesses are not approached because of the risk of overlap with other surveys conducted by Northern Ireland departments.

MS	Are employer surveys used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			1990s and the 2000s. It will now be conducted every other year (i.e. was carried out in 2013, due to be carried out in 2015). UKCES ESS collects data on vacancies, hard-to-fill positions and skills shortages. The survey in 2013 collected data from 91,000 businesses, across all sectors. The MAC use ESS to calculate three metrics at a SOC2010 four digit resolution: skill-shortage vacancies/total vacancies; skill-shortage/hard-to-fill vacancies and skill-shortage vacancies/employment. (2) The most reliable source of vacancies in Britain is regarded as the ONS Vacancy Survey. This is a regular survey of businesses providing an accurate, comprehensive measure of the total number of vacancies. It is also conducted on a monthly basis, giving high temporal resolution. However, it is not possible to disaggregate vacancies by occupation, or by sector at a detailed level. Its application for the MAC's purposes is therefore limited.	matched at the 3-digit level. (2) Data are determined using Standard Industrial Codes (SIC) 2007. These are provided as single digit, low resolution groups, (e.g. "Manufacturing", "Construction").ISCO-08 classifications are not used, and cannot be calculated from single digit SIC2007 classifications.		

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries

Table A2.4 Forecast/ foresight analysis

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
AT	**Yes** Forecast model for the purpose of compiling the quotas, specified in the Settlement Regulation, on the basis of which residence permits falling under quotas are issued to third-country nationals The forecast is part of the Expertise on Settlement of Foreign Nationals in Austria; prepared annually from 1994 to 2013 and discontinued in 2014.	Yes The forecast is part of the Expertise on Settlement of Foreign Nationals in Austria. It does not analyse the labour migration needs as such but rather what quotas should reasonably be set for the following year. The forecast model is used for the purpose of compiling the quotas, specified in the Settlement Regulation, on the basis of which residence permits falling under quotas are issued to third-country nationals.	Forecast model for the purpose of compiling the quotas, on the basis of which residence permits falling under quotas are issued to third-country nationals. The extent to which the quotas were utilised during the previous years is examined. Also an estimate is provided for the required quotas for the following year.	(1) Not known; presumably industries and occupations, with qualifications implied in occupations (2) Not known; presumably national and international classifications	Austrian Institute of Economic Research and Danube University Krems on behalf of the Federal Ministry of the Interior	Regional level (federal provinces)
BE	**Yes** • The Brussels 'Monitoring and Anticipation' study series • 'Promising professions' (Métiers Porteurs) in Wallonia • *Métiers d'avenir, Etats des lieux sectoriels et propositions de futurs, Recueil Prospectif*, in Wallonia • VLAMT, Flemish labour market research of the future	No	Every region uses its own methodology and approach, consisting of among others statistical analyses, quantitative forecasts, expert consultations & strategic focus on certain sectors in demand.	Sector	Regional PES	Regional
CY	**No**	N/a	N/a	N/a	N/a	N/a
CZ	**No**	N/a	N/a	N/a	N/a	N/a
DE	**Yes**	No, not directly. It is used as a tool to articulate demands in public and/or other political debates.	Often on the basis of the bottleneck analysis conducted by the Federal Employment Agency. Forecast methodologies differ from institution to institution and depend on the used (core) variables (applicant-to-vacancy ratio, income developments, demographic changes, etc.).	Skills, occupations, sectors, professions, income developments, quantitative comparisons between young and old cohorts of employees, etc.	mostly by private research institutions or interest groups	National and regional level
EE	**Yes**	No	Basis for the forecast is data collected by the Labour Force Survey (LFS) and the latest	Sectors, occupations, skills	Ministry of Economic Affairs and Communication	National

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			(2011) population census. Based on the LFS changes in employment by occupation, and in five groups of activities is analysed. Data of population census is used to estimate labour needs in more detail by occupations and the educational needs of employers			
EL	**No**	N/a	N/a	N/a	N/a	N/a
ES	**Yes**	Yes	This tool is based on the info available on job vacancies advertised by public employment services, and its own statistics related to job seekers	Occupations It is used "la clasificación nacional de ocupaciones" within the framework of ISCO-08	The public employment services	Regional level
FI	**Yes** 1)Regional development prospects 2/2014 2)VATT Institute for Economic Research: Labour demand in the Finnish economy in 2015–2030 (Study 181/2015) 3)Fore-Ammatti service 4) Education and demand for labour 2025, Anticipation results for future jobs and educational needs Finnish National Board of Education, Reports 2011:251	None of the instruments is used for determining the need for labour migration	1) The overview, drawn up twice a year, offers the view of the Centres for Economic Development, Transport and the Environments and key regional developers about the current situation and short-term outlook in sub-regional units. The overview assesses regions' development prospects and the availability of skilled labour. 2) Labour demand is estimated on a sector by sector basis until 2030. The analysis is conducted with the VATTAGE equilibrium model. 3) ForeAmmatti is a service used in labour administration as an aid in planning workforce training in particular. Labour market forecasts estimate demand (attrition and the change in the number of the employed, among others) and supply (e.g. how much new labour comes to the labour market from educational institutions and the supply of labour formed by the unemployed). 4) The Finnish National Board of Education (FNBE) has anticipated demand for labour by preparing occupational structure forecasts by industry for 2025.	1) Sectors (such as industry, construction and services) and occupations 2) The analysis is conducted for the sectors of the VATTAGE model. The results for 28 sectors are presented. Statistics Finland's occupational structure classification is used. 3) ForeAmmatti operates at the four-digit level of the ISCO classification (400 occupations). 4) The figures for demand for labour by industry have been used as a basis for preparing a forecast of demand for labour by occupational group.	1) The Ministry of Employment and the Economy, the Centres for Economic Development, Transport and the Environment. 2) VATT's sector forecast is utilised by the Finnish National Board of Education, ministries and representatives of regions. 3) ForeAmmatti is used by the Ministry of Employment and the Economy, the Centres for Economic Development, Transport and the Environment, and the Employment and Economic Development Offices. 4) Educational administration	1) The Centre for Economic Development, Transport and the Environment regions (15 regions) and subregional units (67 units). 2) Scenarios are drawn up at both regional and national levels. 3) The Centre for Economic Development, Transport and the Environment regions (15 regions). 4) National level

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			In addition, the Board has anticipated natural wastage from the employed labour force over the 2008–2025 period. The forecasts of demand for labour have been used to derive intake needs in vocationally professionally oriented education and training up until the late 2010's.			
FR	**Yes** The France Stratégie occupational survey for 2022 in partnership with DARES	Yes, in 2008, the France Stratégie survey helped identify shortage occupations and thus contributed towards drafting the list of shortage occupations	This survey falls within an employment jobs forecasting (PMQ) exercise to look at the prospects in terms of changes to labour resources and posts by occupation. This exercise is based on all partners and administrations affected by the analysis of the prospects of changes in the short term to employment by occupation and qualification	The FAP classification is used	This survey is used by public authorities, particularly by the General Labour Directorate (DGT)	National leve
HR	**No**	N/a	N/a	N/a	N/a	N/a
HU	**Yes**	No	The forecasts and statistics of the regional government offices (the so-called labour market prognosis) play a significant role in determining shortage qualifications. When carrying out the short-term labour market prognosis for 2014, the representatives of the NEO and the mandated partner interviewed the managers of 7108 companies about their anticipated demand for workforce, currently and in the future.	The research followed a horizontal economic approach aiming to monitor economic expectations of companies active on the labour market and, parallel to that, the global monitoring of the anticipated expansion capability of the labour market.	Until 2014, these were prepared by the National Employment Office (NEO); from 2015 on, the authority in charge is the Ministry of National Economy.	
IE	**Yes**	Yes	The annual NSB includes forecasts based on Central Statistics Office data; Central Bank of Ireland, Quarterly Bulletin. Occupational projections are also derived from an in-house economic model.	Occupations	Expert Group on Future Skills Needs (EGFSN)	National
IT	**Yes** Excelsior survey	This system reconstructs the forecasts of labour demand and of occupational and training needs, as	The data collected through the Excelsior survey provide qualitative trends, such as a need for further training of newly recruited persons; a demand for specific experience	The sectors of economic activity in the Excelsior information system are grouped into 28 clusters, specifically defined based on a theoretical sampling	This tool is used by the Ministry of Labour and by the Italian Union of Chambers of Commerce, Industry, Handicraft and Agriculture – Unioncamere. The latest 3-year policy papers	The surveyed and analysed units are the enterprise and the local provincial unit. Therefore, it is possible to

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
		expressed by enterprises, on a yearly and quarterly basis. Therefore, it is intended to estimate the total labour demand of enterprises (i.e., both native and foreign workers). It contains, however, a section especially dedicated to foreign labour. Moreover, publications include a yearly and quarterly report exclusively devoted to foreign labour in Italy.	and/or qualifications; and the professional profiles, sectors and skills that are mostly in demand.	plan. These clusters include divisions (2-digit codes) and groups (3-digit codes), as specified in the official classification of economic activities, ATECO 2007. ATECO 2007 is the domestic version of the European nomenclature, Nace Rev.2. Job levels refer to the following categories: senior managers, middle managers and employees, manual workers and other staff. Elementary occupations are classified according to the ISTAT 2001 classification, ensuring consistency with the European classification (ISTAT 2011 is linked to ISCO 2008).	on immigration and foreign nationals (Article 3(1) of the Immigration Law) based the determination of immigration quotas on the forecasts of the demand for migration labour worked out in the Excelsior survey.	estimate occupational needs in the short and medium term, including at a local level, for each of the 105 Italian provinces disaggregated by class size and economic activity.
LV	**Yes**	No	Medium and longer-term labour demand and supply forecast	Medium and longer-term forecasts are prepared as broken down to 15 sectors (based on NACE Rev. 2), 40 occupation groups (based on ISCO-08), 3 education levels and 23 thematic education areas, for each of them (based on ISCED97).	Ministry of Economics	Used at national level
LU	**Yes**	No, but can be used for migration purposes	Employer surveys in the IT and construction sectors used to produce short-term forecasts (See above Employer surveys)	(1)The following sectors are covered by this survey: -construction -financial services -commerce and services to enterprises - manufacturing industry The choice of professions is based on the nomenclatures of jobs on IT systems (2011). No. The ISCO classification is not used in this survey (2) The following sectors are covered by this survey: -construction -industry	(1) Chamber of Commerce through the Luxembourg School for Finance, the Ministry of National Education, the Ministry of Higher Education and Research, the Ministry of Labour, Employment and Social and Solidarity Economy and the ADEM (2) FEDIL	National

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
				-public works Not all branches of the industry and the construction sector, as defined by the NACE codification, are included		
LT	**Yes**	No	Since 1995, the Lithuanian Labour Exchange has annually carried out labour market forecasts for the upcoming years. The methodology of labour market forecasting has been created jointly with experts of the Swedish National Labour Market Board. The representation of survey results has been achieved by means of proportionate selection of labour market participants according to forms of ownership, economic activities and number of employees. Since 1997, the Lithuanian Labour Exchange has annually issued the publication "Labour Market Forecast" and since 2003 it has also published "Barometer of Employment Opportunities". The labour market forecasts have been carried out according to the results of the employer survey conducted in September and October.	1) Sectors, qualifications, occupations 2) National (developed based on ISCO-08)	Lithuanian Labour Exchange	National
MT	**Yes**	Yes	A Questionnaire is used to identify shortages for the whole workforce and thus forecast labour market demands	1. Occupations, skills, qualifications & competences 2. International classification	Employment and Training Corporation (Malta's PES)	National
NL	**Yes** (1) UWV labour market forecast (2) Labour market in relation to education and occupation	No	Every two years a forecast is published which shows an overview of the current and future developments in the Dutch labour market. The forecasts relate to a period of six years.	(1) Sectors (2) Occupational groups, types of education and sectors.	(1) UWV (2) ROA on assignment for UWV and the Ministry of Education, Culture and Science etc.	1) National and regional 2) National and regional (only differentiation in relation to education)
PL	**Yes** Projection tool: www.prognozwaniezatrudnienia.pl	No This tool highlights shortages for all workforce (at the national level), but it	The projection tool generates employment projections by occupation groups at the level of major, sub-major and minor occupation groups, in line with	Occupation groups in line with the Classification of Occupations and Specialities	Human Resources Development Center in cooperation with the Institute of Labour and Social Studies; The Ministry of Labour and Social Policy – Department	NUTS 2 statistical areas

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
		does not have a special component devoted to migration.	the Classification of Occupations and Specialities, for the needs of the labour market and economic sectors.		of Economic Analyses and Forecasts (portal administrator)	
PT	**Yes** A Report provides employment forecast and identifies needs for foreign labour	The Report informs the annual quota	Analysis of the evolution of migratory flows, quarterly evolution of the national employment using estimates from Employment Surveys, evolution of foreign population in the labour market, using estimates from Employment Surveys, evolution of job offers by companies, employment applications by unemployed, short and medium term forecasts for the main macro-economic indicators.	Sectors	The Ministry for Solidarity, Employment and Social Security (MSESS) coordinates an inter-ministerial group constituted by representatives from the Regional Directorate for Labour and Professional Qualifications of the Autonomous Region of the Azores, the Madeira Employment Institute, the Portuguese Immigration and Borders Service and IEFP, I.P. A prior opinion is submitted by the Permanent Committee for Labour Matters	N/a
SE	**Yes**	No	E.g. Occupational forecasts.	Occupation	The Public Employment Agency, Statistics Sweden (SCB)	National
SI	**No**	N/a	N/a	N/a	N/a	N/a
SK	**Yes** Art. 12 of the Act on Employment Services entitles the Central Office of Labour, Social Affairs and Family to analyse and forecast labour market developments and to publish them at its website.	No	N/a	N/a	The analyses and forecasts of labour market developments are prepared in cooperation with the Ministry of Labour, Social Affairs and Family of the Slovak Republic, the Ministry of Economy of the Slovak Republic, the Ministry of Education, Science, Research and Sport of the Slovak Republic in cooperation with professional associations and organisations	N/a
UK	**Yes**	Yes	As part of the Migration Analysis Committee's (MAC) call for evidence from employers on job shortages for the shortage occupation list, they ask for information on projected future trends in the demand for, and supply of, workers within an occupation (e.g. information on the age profile of the workforce, expected retirement patterns, and the number of newly qualified workers expected to come on stream). Employers are, however, not obligated to provide this information, and	(1) Data are analysed at a four digit SOC2010 level, equivalent to occupational group. (2) Although not an international classification, SOC2010 does align well to ISCO-08 and mapping across between the two is available via the Office for National Statistics, where 67% of SOC2010 codes are successfully mapped across to ISCO-08 at the 4-digit level, with the remainder matched at the	The Migration Advisory Committee (MAC) use evidence from this non-compulsory request as part of a suite of tools to identify labour shortages. This feeds into the overall assessment of labour shortages by the MAC. The MAC recommends shortage lists to the Government.	National (UK-wide)

MS	Are forecasts/foresight analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
			this makes up only one of a number of factors forming the bottom-up assessment of shortages in the labour force (e.g. earnings growth, hours worked, vacancies).	3-digit level.		

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries.

Table A2.5 Qualitative studies/ analysis

MS	Are qualitative studies/ analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
AT	**No**	N/a	N/a	N/a	N/a	N/a
BE	**Yes**	No	While making the shortage occupation list, after the quantitative phase, Wallonia does follow-up surveys of the vacancies with the employers. Recruitment counsellors directly interview employers on the nature of their recruitment difficulties. Similarly, every two years, the Brussels PES Actiris holds extensive external consultations with employer federations and 'occupational reference centres'.[1] The consultations cover recruitment difficulties, planned actions and current and future sector evolutions that may have an impact on the evolution of employment.[1] The Brussels PES Actiris sends a questionnaire to the employer federations (in 2015, about 40 federations were consulted). Actiris also complements the questionnaire with a face-to-face interview with representatives of the occupational reference centres, as these centres have extensive knowledge about their sector. In Flanders, sector managers as well as sector organisations and provincial specialists are consulted for additional information.	Individual Employers + Sector level	Regional PES	Regional
CY	**No**	N/a	N/a	N/a	N/a	N/a
CZ	**No**	N/a	N/a	N/a	N/a	N/a
DE	**Yes** Skilled labour shortage analysis, conducted by the Federal Employment Agency twice a year.	Yes, but only partially. If labour shortages in specific occupations are	Ratio of job vacancies to job-seekers (applicant-to-vacancy ratio) and duration of vacancy (in relation to average and absolute increase of days). Additionally, a qualitative assessment is conducted in	(i) Occupations, skill levels, sectors, regional differences (ii) Based on national	Federal Employment Agency in coordination with the Ministry of Labour and Social Affairs	National and regional level

MS	Are qualitative studies/ analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
		recognised in two consecutive analyses, the labour shortage list can be adjusted. For non-academic occupations mentioned in the list the priority examination is waived.	terms of age distribution among employees, number of apprenticeships etc.	Classification of Occupations (KldB 2010)		
EE	**Yes**	No, used for identifying the overall labour market shortages, not directly linked to labour immigration	currently being developed	Sector, skills, professions	Estonian Qualifications Authority	National
EL	**No**	N/a	N/a	N/a	N/a	N/a
ES	**No**	N/a	N/a	N/a	N/a	N/a
FI	**Yes** (1) Occupational barometer (2) Is labour shortage true? Labour Institute for Economic Research, Report 27/2013 (3) Finnish Business and Policy Forum EVA's analysis, The makers of the future – Finland cannot cope without migration	(1) The occupational barometer is not directly used for determining the need for labour migration, but for its part, it influences the work permit policies of the Centres for Economic Development, Transport and the Environment. (2) The report gives recommendations and reviews the tightness of the cleaning sector in Uusimaa. (3) In order for Finland to have enough labour in the future, there	(1) The occupational barometer is a labour administration tool with which labour supply and demand and their balance are estimated in approximately 200 occupations and in different regions. The estimates apply to the near future, that is: approximately six months (2) The authors of the report develop a statistical indicator that describes the labour market situation in the cleaning sector (on the basis of an indicator developed by Great Britain's Migration Advisory Committee, MAC). When the indicator shows that the labour market situation is tight, it would be worthwhile to increase immigration. The authors' analysis alleviates the concern about the tightness of the cleaning sector in Uusimaa. (3) The analysis looks into the availability of labour force taking into account Finland's population trends and labour reserve, and states that Finland needs 34,000 net immigrants each year so that the number of working-age people would not decrease in the next few decades. The analysis is mainly based on Statistics Finland's databases.	(1) The occupational barometer is prepared on the level of specific occupations. (2) The ISCO classification (at the four-digit level) has been used since July 2014. (2) Professional field, the cleaning sector. At the time of the writing of the report, a Nordic classification of occupations (PAL classification) was used. (3)The analysis discusses labour demand at a general level, not by sector or occupation.	(1) The occupational barometer is used by labour administration (MEE, the Centres for Economic Development, Transport and the Environment, the Employment and Economic Development Offices) (2) Not really used, but probably exerts influence on the background of decisions as an expert estimate. The report aims to give recommendations for developing the occupational barometer. (3) The think tank EVA's aim is to produce timely information about prevailing phenomena and to bring new points of view into social debate. In business life, EVA seeks to invoke continuous discussion about needs for change in companies.	(1) The occupational barometer is prepared by each Employment and Economic Development Office in their region, the sub-regional unit (67 units) being the most detailed level. (2) Uusimaa (3) The national level.

MS	Are qualitative studies/ analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
		must be a sufficient amount of working-age people. The analysis comments on the significance of immigration in this respect.				
FR	*See Employer Surveys*					
HR	**No**	N/a	N/a	N/a	N/a	N/a
HU	**Yes**	No	Independent organisations also play an important role in preparing reports. The Hungarian Chamber of Commerce and Industry (MKIK) carried out a research in 2014. Employers were interviewed to specifically collect information on shortage occupations. Data collection was intended to be a tool to help the work of the CDECs. Since the same research was conducted between 2008-2014 annually, it is possible to carry out comparative analysis and to gain comparable data. On the basis of these data, the trends in the labour market can be forecasted, thus alongside the short-term planning, it is also possible to shape mid-term or long-term forecasts with a focus on necessities. Also, the Manpower international survey has dealt with Hungary.	This is a uniformly coordinated project; the methodology of the interviews remained untouched since 2008. In 2014, as an additional element, not only entrepreneurs but also representatives of the public sphere and recent graduates were interviewed.	The Hungarian Chamber of Commerce and Industry (MKIK) carried out a research in 2014.	National
IE	**Yes**	Yes	NSB contains qualitative analysis based on a telephone survey of 100 recruitment agencies conducted by SLMRU personnel. An online text search may also be undertaken to elucidate findings. A more detailed analysis of such work is published in the annual Vacancy Overview, which provides an overview of the demand for labour by identifying trends in advertised job vacancy data	Occupations	Expert Group on Future Skills Needs (EGFSN)	National
IT	**No**	N/a	N/a	N/a	N/a	N/a
LV	Analysis of vacancies and changes of unemployed portrait	No	Analysis of the vacancies (registered at State Employment Agency) and of the portrait of unemployed is carried out by preparing shortage list. In addition, detailed statistics on unemployment and vacancies is published via homepage of State Employment agency on the monthly basis.	Region Sector Occupational group Level of education	State Employment Agency	National

MS	Are qualitative studies/ analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
LU	**No**	N/a	N/a	N/a	N/a	N/a
LT	**No**	N/a	N/a	N/a	N/a	N/a
MT	**Yes**	Yes	EU publications, national documentation		Employment and Training Corporation (Malta's PES)	National
NL	**Yes**	No	Main report on Sectors identified details the most important developments in sectors.	Sectors and occupational groups	UWV	National
PL	Immigrants with high qualifications on the Polish labour market. Social study – the project is co-financed by the European Fund for the Integration of third-country nationals and the state budget, it is implemented jointly by the "Our Choice" Foundation and the Institute for Socio-Economic Enquiry (ISEE). http://www.i-see.org.pl/strona/index.php?page=efi2	No	Based on statistical data, the authors attempted to characterise main trends in matching the supply of immigrant labour force and the national demand for labour.	Occupations Occupational groups Sectors (sections of Polish Classification of Activity.	Insitute for Socio-Economic Enquiry (ISEE) and the "Our Choice" Foundation	National and regional level
PT	**Yes** Report prepared by the Ministry of Employment to which is used to define the indicative overall quota for employment opportunities	Yes	This report analyses information on: a) The evolution of migratory flows in Portugal, by legal status and nationality, with a greater emphasis on demand for and granting of new residence permits; b) The quarterly evolution of the national employment market according to sector of activity and profession, using the estimates from Employment Surveys; c) The evolution of the foreign population in the national labour market, using estimates by the Employment Surveys and administrative information on unemployment recorded among foreign citizens (especially from third-countries), as well as records of the foreign population receiving unemployment benefits; d) The evolution of job offers by companies, employment applications by unemployed individuals, successful placements and recorded unemployment, with greater emphasis on sectors of activity which have a higher predominance of immigrants; and e) Short and medium-term forecasts for the main macro-economic indicators, namely GDP and its components, the evolution of prices and the evolution of the labour market (employment, unemployment, productivity). Finally, each report submits one or several proposals related to the delineation of the annual quota. Proposals can include national and regional figures, in this case referring to the Autonomous Regions.	Sectors (NACE) and occupations (ISCO	Ministry of Employment	National mainland and autonomous regions

MS	Are qualitative studies/ analysis used in the Member State?	Is this instrument used to determine labour migration needs?	Brief description and methodology used	Level of analysis (skills, occupation, sectors, professions) and classification	Responsible organisations	Geographical level (national, regional, municipal)
SE	**Yes** However, they do not seem to be widely used.	No	Ad-hoc reports by social partners contain qualitative aspects in some instances (e.g. excerpts of interviews), research reports on the subject would likely contain some examples of qualitative analysis.	Various	social partners	National
SI	**No**	N/a	N/a	N/a	N/a	N/a
SK	Qualitative analyses are only used under individual projects and potential studies. This tool is not used on a systematic basis.	No	N/a	N/a	N/a	N/a
UK	**No**	N/a	N/a	N/a	N/a	N/a

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries.

Annex 3 Workers employed by specific occupations and estimated unfilled vacancies (latest available year)

Table A3.1 Health Professionals

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCNs for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
AT	2013	**Health Professional (22)**	30,400	47,600	78,000	2,300	3,800	6,100	500	700	1,200	14	17	31	233
		***Of which:* Medical doctors (221)**	21,300	18,200	39,500	1,500	1,000	2,500	300	200	500	8	8	16	149
		***Of which:* Nursing and Midwifery Professionals (222)**	600	3,100	3,700	0	0	0	0	0	0	0	0	0	8
BE	2013	**Health Professional (22)**	54,567	114,380	168,947	2,582	3,967	6,549	301	873	1,174	N/a	N/a	N/a	7,339
		***Of which:* Medical doctors (221)**	19,665	16,511	36,176	1,189	1,260	2,449	96	304	400	N/a	N/a	N/a	N/a
		***Of which:* Nursing and Midwifery Professionals (222)**	9,121	44,505	53,626	244	950	1,194	205	450	655	N/a	N/a	N/a	6,088
HR	2014	**Health Professional (22)**	1,534	5,372	6,906	N/a	N/a	N/a	N/a	N/a	11	N/a	N/a	11	N/a
		***Of which:* Medical doctors (221)**	281	670	951	N/a	N/a	N/a	N/a	N/a	11	N/a	N/a	11	N/a
		***Of which:* Nursing and Midwifery Professionals (222)**	534	2,847	3,381	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
CZ	2011	**Health Professional (22)**	286,100	330,500	616,600	1,161	2,056	3,217	291	271	562	N/a	N/a	N/a	754
		***Of which:* Medical doctors (221)**				932	1,319	2,251	215	163	378	N/a	N/a	N/a	549
		***Of which:* Nursing and Midwifery Professionals (222)**				54	364	418	4	39	43	N/a	N/a	N/a	38
DE	2014	**Health Professional (22)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Medical doctors (221)**	N/a	N/a	365,247	N/a	N/a	22,080	N/a	N/a	17,581	N/a	N/a	N/a	N/a
		***Of which:* Nursing and Midwifery Professionals (222)**	3,483	23,022	26,505	35	465	499	40	222	262	N/a	N/a	N/a	342
EE	2011; 2014 for No of res. perms & No of unfilled vacancies	**Health Professional (22)**	1,586	9,313	10,899	14	16	30	128 (39)	398 (141)	526 (180)	11	8	19	523
		***Of which:* Medical doctors (221)**	993	3,152	4,145	6	5	11	71(16)	98 (21)	169 (37)	7	3	10	86
		***Of which:* Nursing and Midwifery Professionals (222)**	46	3,147	3,193	0	7	7	6 (4)	177 (93)	183 (97)	0	0	0	76
FI	2012 & 2014[68]	**Health Professional (22)**	10,647	24,921	35,568	342	523	865	117	165	282	20	60	80	N/a
		***Of which:* Medical doctors (221)**	7,803	11,517	19,320	282	383	665	70	87	157	N/a	N/a	N/a	2,829
		***Of which:* Nursing and Midwifery Professionals (222)**	397	5,307	5,704	1	3	4	1	1	2	20	60	80	556
FR	2012;	**Health Professional (22)**	169,382	583,212	752,594	5,371	10,593	15,964	14,114	11,951	26,065	N/a	N/a	N/a	2,301

68 2014: residence permits and unfilled vacancies; 2012: total employment, employment of EU-nationals from other MS and employment of TCN

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCNs for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
	2014 for No of unfilled vacancies	*Of which:* Medical doctors (221)	54,624	59,598	114,221	3,161	2,769	5,929	6,023	2,016	8,039	N/a	N/a	N/a	169
		Of which: Nursing and Midwifery Professionals (222)	9,362	61,966	71,328	0	287	287	0	1,221	1,221	N/a	N/a	N/a	157
HU	2014	Health Professional (22)	19,304	38,431	57,735	299	219	518	31	24	55	5	7	12	104
		Of which: Medical doctors (221)	11,850	12,782	24,633	299	219	518	7	5	12	2	0	2	44
		Of which: Nursing and Midwifery Professionals (222)	412	6,141	6,553	0	0	0	0	0	0	0	0	0	46
IE	2014	Health Professional (22)	N/a	N/a	85,200	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Medical doctors (221)	N/a	N/a	11.900	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	N/a	N/a	53,500	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	2014	Health Professional (22)	2.2	13.1	15.3	N/a	N/a	N/a	N/a	N/a	N/a	7	0	7	251
		Of which: Medical doctors (221)	N/a	N/a	5.6	N/a	N/a	N/a	N/a	N/a	N/a	7	0	7	79
		Of which: Nursing and Midwifery Professionals (222)	N/a	N/a	4.0	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	66
LT	2014	Health Professional (22)	32	341	373	N/a	N/a	N/a	9	9	N/a	N/a	N/a	N/a	28
		Of which: Medical doctors (221)	9	18	27	N/a	N/a	N/a	8	8	N/a	N/a	N/a	N/a	7
		Of which: Nursing and Midwifery Professionals (222)	4	195	199	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	9
LU	2014	Health Professional (22)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	1	1	N/a
		Of which: Medical doctors (221)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	1	1	N/a
		Of which: Nursing and Midwifery Professionals (222)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	N/a
MT	2014	Health Professional (22)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Medical doctors (221)	654	422	1076	20	24	44	32	13	45	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	558	1002	1560	7	57	64	47	70	117	N/a	N/a	N/a	18
NL	2014	Health Professional (22)	78,000	210,000	288,000	2,000	3,000	6,000	.	3,000	4,000	N/a	N/a	N/a	N/a
		Of which: Medical doctors (221)	29,000	44,000	73,000	.	.	.	.	.	.	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	18,000	103,000	121,000	.	.	2,000	0	.	2,000	N/a	N/a	N/a	N/a
PL	2014	Health Professional (22)	N/a	N/a	400,298	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	116	1,716
		Of which: Medical doctors (221)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
PT	2014	Health Professional (22)	224	1,079	1,303	0	3	3	3	0	3	N/a	N/a	N/a	431
		Of which: Medical doctors (221)	1	7	8	0	1	1	0	0	0	N/a	N/a	N/a	5
		Of which: Nursing and Midwifery Professionals (222)	51	318	369	0	0	0	0	0	0	N/a	N/a	N/a	118
SE	2014 for	Health Professional (22)	3,732	6,101	9,833	3,691	6,068	9,759	41	33	74	N/a	N/a	N/a	N/a

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCNs for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
	TCNs and 2013 for EU nationals	*Of which:* Medical doctors (221)	3,511	4,194	7,705	3,487	4,187	7,674	24	7	31	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	75	1437	1,512	65	1,423	1,488	10	14	24	N/a	N/a	N/a	N/a
SK	2014	Health Professional (22)	10,213	44,147	54,360	42	64	106	213	111	324	N/a	N/a	N/a	112
		Of which: Medical doctors (221)	7,403	10,536	17,939	26	24	50	179	88	267	N/a	N/a	N/a	69
		Of which: Nursing and Midwifery Professionals (222)	520	22,324	22,844	2	8	10	3	4	7	N/a	N/a	N/a	14
SI	2014	Health Professional (22)	4,852	15,848	20,700	95	166	261	125	253	378	N/a	N/a	N/a	N/a
		Of which: Medical doctors (221)	2,163	3,639	5,802	53	77	130	89	176	265	N/a	N/a	N/a	N/a
		Of which: Nursing and Midwifery Professionals (222)	753	6,374	7,127	3	17	20	2	10	12	N/a	N/a	N/a	N/a
UK	2014	Health Professional (22)	327,000	928,000	1,255,000	21,000	38,000	58,000	30,000	42,000	72,000	3,669	3,879	7,548	17,844
		Of which: Medical doctors (221)	131,000	110,000	242,000	8,000	*	14,000	17,000	9,000	26,000	490	642	1,132	2,238**
		Of which: Nursing and Midwifery Professionals (222)	66,000	546,000	612,000	*	19,000	23,000	6,000	26,000	32,000	821	2,132	2,953	12,446

Source: Statistics provided in the National Reports

Notes

AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero.
No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated.
CZ: Last available year is the year 2011 (31/12/2011 respectively). Due to long-term changes in the monitoring system, the relevant data on foreign employment are available for year 2011 only. Data for recent years are considered to be a qualified estimate. Data on total employment and number of unfilled vacancies for recent years exist, but when using them, the table would be misleading. Numbers in the table include employment within aggregation "2" instead of "22", "221" and "222".
DE: Data source: Bundesärztekammer (German Medical Association).
EE: vacancies during the year 2014. Regarding data on number of unfilled vacancies, data does not reflect all the vacancies in that time period. Data of Estonian Unemployment Insurance Fund.
() : out of which persons with undetermined citizenship
FR: Statistics on residence permits do not identify the number of permits issued by occupation. Statistics on total employment, employment of EU nationals and TCNs was collected from the Continuous Employment Survey conducted by INSEE in metropolitan France for the year 2012 (http://www.INSEE.fr/fr/methodes/default.asp?page=sources/ope-enq-emploi-continu.htm). Statistics on the number of unfilled posts is obtained after having deducted the jobs filled from the job offers. This part was completed using data on shortage occupations from DARES for the whole of France for 2014 and without making a distinction between immigrants and non-immigrants. Sources: EEC (Metropolitan France) and shortage occupations (DARES)
IE: A total of 506,700 persons were employed in ISCO groups 22, 53, 51, 6, 25 and 23 in Quarter 4, 2014. Of this number 447,300 were Irish and 59.4 were non-Irish. Source: Central Statistics Office.
LU: Luxembourg cannot provide this information because the classification of employment is made by economic sectors (ROME)216 and not using the ISCO-08 classification. Also the TCN working population only represented in the 4th Quarter of 2014 3,2% (11.839) of the national workforce (375.195).
LV: Data source for total employment: Central Statistical Bureau, Labour Force sample survey results ( ) : Data are based on small number of respondent answers.
NL: Definition Central Commission for Statistics (CCS), 1991.
A full stop (.) in the table means that sufficiently accurate data is missing; it concerns figures which, when rounded off, are smaller than 15,000 in the first total column.
In the following columns a full stop (.) in the table means that sufficiently accurate data is missing; this concerns figures which, when rounded off, are smaller than 1,500
PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.
SE: Statistics regarding third country nationals are from the database of the Swedish Migration Agency and cover the year 2014. Statistics regarding EU-nationals is taken from Statistics Sweden (SCB) and refers to 2013, which was the latest available. No data is entered for the column "Number of residence permits issued to third-country nationals for specific occupations", but these numbers would be identical to the ones in the preceding column "Employment of third country nationals" inasmuch as it is a prerequisite for the applicant of a work permit to have an offer of employment in order to be granted a permit.
SK: Total employment statistics are estimates.
UK: Health Professionals Includes the following SOC2010 codes: 2211, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2221, 2222, 2223, 2229, 2231, 2232, 3213
Of which: Medical doctors (221) Includes the following SOC2010 codes: 2211
Of which: Nursing and Midwifery Professionals (222) Includes the following SOC2010 codes: 2231, 2232
UK does not use ISCO-08 codes to define occupational groups. The data are broken down by Standard Occupational Codes, last updated in 2010 (SOC2010). For definitions, please refer to SOC2010 guidance and methodology (http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/index.html)

Employment data: Data extracted from UK Annual Population Survey (APS) data. APS is produced quarterly with each dataset containing twelve months of data. There are approximately 360,000 individuals and 170,000 households per dataset, with data being weighted up to the UK population level (see http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/labour-market-statistics/index.html for guidance). Data provided are for 2014, rounded to the nearest 1000 individuals.
Resident permits data: UK data show the number of Certificates of Sponsorship (CoS) granted both out of country and in-country for specific occupations in 2014. Out of country CoS provide estimates of the number of third-country nationals granted visas for specific occupations in 2014. In-country CoS provide estimates of third-country nationals switching or extending their stay into these occupational groups whilst already in the UK in 2014. These are estimates only: third-country nationals granted CoS outside of the country may have their visa application refused, may not use approved visas to enter the UK, or may have left the UK by the end of 2014; third-country nationals switching or extending their stay into these occupational groups may have left the UK by the end of 2014.
Unfilled vacancies data: Data provided to the Home Office on formal request to the UK Commission for Employment and Skills (UKCES). Data are drawn from UKCES's Employer Skills Survey (ESS) 2013 occupational file. The survey has three measures for vacancies: overall vacancies, hard to fill vacancies and skill shortage vacancies. Data provided show overall vacancies for each occupational group as a proxy for unfilled vacancies.

*Data values less than 6,000 are suppressed as they are not considered statistically reliable. This is in line with ONS guidance on minimum publication thresholds due to sample variation.

**Data depicting overall vacancies for Medical Doctors (221) are indicative, based on UKCES's data quality methodology. UKCES report any data based on survey responses from less than 50 employers as indicative, and exclude data based on less than 25 employers. For Medical Doctors (221) category, the data were based on surveys from 48 employers, and are therefore indicative only. All other categories were based on survey responses from more than 50 employers.

Table A3.2 Personal Care Workers

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
AT	2013	**Personal care workers (53)**	10,200	102,400	112,600	600	6,500	7,100	900	4,600	5,500	0	0	0	409
		***Of which:* Child Care Workers (5311)**	1,000	34,000	35,000	100	2,200	2,300	0	1,600	1,600	0	0	0	109
		***Of which:* Health Care Assistants (5321)**	9,200	68,400	77,600	500	4,300	4,800	900	3,000	3,900	0	0	0	202
		***Of which:* Home-based Personal Care Workers (5322)**										0	0	0	98
BE	2013	**Personal care workers (53)**	9,523	151,631	161,154	673	5,941	6,614	642	2,580	3,222	N/a	N/a	N/a	3,949
		***Of which:* Child Care Workers (5311)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,115
		***Of which:* Health Care Assistants (5321)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,970
		***Of which:* Home-based Personal Care Workers (5322)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,303
HR	2014	**Personal care workers (53)**	48	1,221	1,269	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Child Care Workers (5311)**	8	123	131	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Health Care Assistants (5321)**	2	25	27	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Home-based Personal Care Workers (5322)**	38	1,073	1,111	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
CZ	2011	**Personal care workers (53)**	265,200	477,900	743,100	291	328	619	39	198	237	N/a	N/a	N/a	171
		***Of which:* Child Care Workers (5311)**				2	4	6	1	32	33	N/a	N/a	N/a	32
		***Of which:* Health Care Assistants (5321)**				19	76	95	8	22	30	N/a	N/a	N/a	23

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Home-based Personal Care Workers (5322)**				3	7	10	1	9	10	N/a	N/a	N/a	15
DE	**30 June 2014** (for the number of unfilled vacancies: annual average 2014)	**Personal care workers (53)**	92,522	427,105	519,627	3,361	22,164	25,525	4,357	17,963	22,320	N/a	N/a	N/a	7,603
		***Of which:* Child Care Workers (5311)**	12,833	57,461	70,294	255	2,325	2,580	362	1,888	2,250	N/a	N/a	N/a	287
		***Of which:* Health Care Assistants (5321)**	67,281	335,131	402,412	2,924	18,879	21,803	3,720	15,247	18,967	N/a	N/a	N/a	5,521
		***Of which:* Home-based Personal Care Workers (5322)**	7,876	26,905	34,781	127	780	907	209	717	926	N/a	N/a	N/a	1,689
EE	**2011; 2014** for No of res. perms & No of unfilled vacancies	**Health Professional (22)**	369	10,536	10,905	1	23	24	33 (16)	1,372 (709)	1,405 (725)	2	1	3	608
		***Of which:* Child Care Workers (5311)**	47	2,373	2,420	0	4	4	3 (0)	395 (163)	398 (163)	0	1	1	146
		***Of which:* Health Care Assistants (5321)**	200	3,599	3,799	0	8	8	18 (10)	516 (316)	534 (326)	0	0	0	158
		***Of which:* Home-based Personal Care Workers (5322)**	66	802	868	1	6	7	5 (3)	79 (37)	84 (40)	0	0	0	74
FI	**2012 & 2014**[69]	**Personal care workers (53)**	13,129	159,070	172,199	218	1,444	1,662	341	1,551	1,892	9	53	62	N/a
		***Of which:* Child Care Workers (5311)**	1,224	41,012	42,236	44	331	375	33	278	311	5	51	56	6,665
		***Of which:* Health Care Assistants (5321)**	7,421	72,793	80,214	100	638	738	200	810	1,010	2	2	4	14,206
		***Of which:* Home-based Personal Care Workers (5322)**	1,304	21,737	23,041	27	242	269	52	188	240	2	0	2	8,400
FR	**2012 & 2014** for No of unfilled vacancies	**Personal care workers (53)**	40,342	349,828	390,170	0	4,887	4,887	3,723	18,745	22,468	N/a	N/a	N/a	18,977
		***Of which:* Child Care Workers (5311)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	16,015
		***Of which:* Health Care Assistants (5321)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	2,982
		***Of which:* Home-based Personal Care Workers (5322)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0
EL	**2014**	**Personal care workers (53)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which:	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	37

69 2014: residence permits and unfilled vacancies; 2012: total employment, employment of EU-nationals from other MS and employment of TCN

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		masseurs/therapists ayuverda/experts therapists method lulur/therapists without drugs													
HU	2014	Personal care workers (53)	8,586	51,599	60,185	44	72	116	19	15	34	6	2	8	609
		Of which: Child Care Workers (5311)	404	30,470	30,874	0	0	0	7	6	13	0	1	1	355
		Of which: Health Care Assistants (5321)	5,287	2,778	8,065	0	0	0	1	0	1	0	0	0	108
		Of which: Home-based Personal Care Workers (5322)	546	10,705	11,250	44	72	116	0	0	0	0	0	0	62
IE	2014	Personal care workers (53)	N/a	N/a	103,200	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Child Care Workers (5311)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Health Care Assistants (5321)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Home-based Personal Care Workers (5322)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	2014	Personal care workers (53)	N/a	N/a	22.1	N/a	N/a	N/a	N/a	N/a	N/a	0	1	1	434
		Of which: Child Care Workers (5311)	N/a	N/a	3.6	N/a	N/a	N/a	N/a	N/a	N/a	0	1	1	61
		Of which: Health Care Assistants (5321)	N/a	N/a	5.9	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	93
		Of which: Home-based Personal Care Workers (5322)	N/a	N/a	5.5	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	150
LT	2014	Personal care workers (53)	18	612	630	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	18
		Of which: Child Care Workers (5311)	2	265	267	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0
		Of which: Health Care Assistants (5321)	9	297	306	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	18
		Of which: Home-based Personal Care Workers (5322)	0	2	2	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	8
LU	2014	Personal care workers (53)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	12	12	N/a
		Of which: Child Care Workers (5311)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	9	9	N/a
		Of which: Health Care Assistants (5321)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	3	3	N/a
		Of which: Home-based Personal Care Workers (5322)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
MT	2014	Personal care workers (53)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Child Care Workers (5311)	244	1,278	1,522	2	30	32	2	108	110	N/a	N/a	N/a	156

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Health Care Assistants (5321)**	638	2,489	3,127	30	104	134	35	117	152	N/a	N/a	N/a	207
		***Of which:* Home-based Personal Care Workers (5322)**	85	664	749	1	14	15	29	274	303	N/a	N/a	N/a	N/a
NL	**2014**	**Personal care workers (53)**	3,000	361,000	391,000	N/a	4,000	4,000	0	9,000	10,000	N/a	N/a	N/a	N/a
		***Of which:* Child Care Workers (5311)**	3,000	93,000	96,000	N/a	2,000	2,000	0	3,000	3,000	N/a	N/a	N/a	N/a
		***Of which:* Health Care Assistants (5321)**	11,000	126,000	137,000	N/a	N/a	N/a	0	3,000	4,000	N/a	N/a	N/a	N/a
		***Of which:* Home-based Personal Care Workers (5322)**	5,000	101,000	106,000	N/a	N/a	N/a	0	2,000	3,000	N/a	N/a	N/a	N/a
PL	**2014**	**Personal care workers (53)**	N/a	N/a	45,537	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	625	7
		***Of which:* Child Care Workers (5311)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	132	N/a
		***Of which:* Health Care Assistants (5321)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	5	N/a
		***Of which:* Home-based Personal Care Workers (5322)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	474	N/a
PT	**2014**	**Personal care workers (53)**	198	3,776	3,974	2	16	18	4	109	113				1,097
		***Of which:* Child Care Workers (5311)**													224
		***Of which:* Health Care Assistants (5321)**	30	212	242	0	1	1	0	3	3				74
		***Of which:* Home-based Personal Care Workers (5322)**	105	2,362	2,467	1	14	15	3	92	95				764
SE	**2014 for TCNs and 2013 for EU nationals**	**Personal care workers (53)**	5696	35789	41485	5616	35676	41292	80	113	193	N/a	N/a	N/a	N/a
		***Of which:* Child Care Workers (5311)**	754	6017	6771	753	6007	6760	1	10	11	N/a	N/a	N/a	N/a
		***Of which:* Health Care Assistants (5321)**	2655	11453	14108	2654	11439	14093	1	14	15	N/a	N/a	N/a	N/a
		***Of which:* Home-based Personal Care Workers (5322)**	110	150	260	31	62	93	79	88	158	N/a	N/a	N/a	N/a
SK	**2014**	**Personal care workers (53)**	3,323	21,386	24,709	29	216	246	20	84	104	N/a	N/a	N/a	67
		***Of which:* Child Care Workers (5311)**	194	1,312	1,506	0	0	0	0	3	3	N/a	N/a	N/a	2
		***Of which:* Health Care Assistants (5321)**	290	3,125	3,415	1	7	8	0	4	4	N/a	N/a	N/a	25
		***Of which:* Home-based Personal Care Workers (5322)**	466	8,088	8,554	28	208	237	19	73	92	N/a	N/a	N/a	34
SI	**2014**	**Personal care workers (53)**	941	6,178	7,119	2	21	23	13	39	52	N/a	N/a	N/a	N/a
		***Of which:* Child Care Workers (5311)**	71	811	882	1	4	4	0	0	0	N/a	N/a	N/a	N/a

MS	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Health Care Assistants (5321)**	387	2,872	3,259	0	9	9	8	27	35	N/a	N/a	N/a	N/a
		***Of which:* Home-based Personal Care Workers (5322)**	96	1,147	1,243	1	3	4	1	6	7	N/a	N/a	N/a	N/a
UK	**2014**	**Personal care workers (53)**	244,000	1,773,000	2,017,000	9,000	73,000	82,000	25,000	76,000	102,000	125	333	458	76,972
		***Of which:* Child Care Workers (5311)**	N/a	152,000	156,000	N/a	14,000	14,000	*	6,000	6,000	0	0	0	2,199
		***Of which:* Health Care Assistants (5321)**	53,000	256,000	309,000	N/a	10,000	12,000	8,000	14,000	21,000	0	1	1	3,608
		***Of which:* Home-based Personal Care Workers (5322)**	133,000	703,000	836,000	N/a	32,000	36,000	17,000	45,000	62,000	124	329	453	54,760

The table does not include information for BG, CYRO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports.

Notes
AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero. No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated. Unfilled vacancies are the annual average of 2013.
CZ: Total Employment: Numbers related to Personal care workers include those related to Personal Services Workers. Numbers in the table include employment within aggregation "5" instead of "53", "5311", "5321" and "5322".
DE: Number of employees subject to social security contribution. Data source: Federal Employment Agency.
EE: () : out of which persons with undetermined citizenship
LV: ( ) : Data are based on small number of respondent answers. … : Data are not available or are too uncertain for presentation
PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.
SE: Statistics regarding third country nationals are from the database of the Swedish Migration Agency and cover the year 2014. Statistics regarding EU-nationals is taken from Statistics Sweden (SCB) and refers to 2013, which was the latest available. No data is entered for the column "Number of residence permits issued to third-country nationals for specific occupations", but these numbers would be identical to the ones in the preceding column "Employment of third country nationals" inasmuch as it is a prerequisite for the applicant of a work permit to have an offer of employment in order to be granted a permit.
SK: Total employment statistics are estimates. *Personal care workers:* Total for Employment of EU-nationals from other MS = 246 persons, includes also 1 person whose gender was not identified. *Of which: Home-based Personal Care Workers:* Total for Employment of EU-nationals from other MS = 237 persons, includes also 1 person whose gender was not identified.
UK: The section *Personal care workers (53)* includes the following SOC2010 codes: 6121, 6122, 6123, 6125, 6126, 6141, 6144, 6145, 6146, and 6147. The section *Child Care Workers (5311)* includes the following SOC2010 codes: 6122, 6123. The section *Health Care Assistants (5321)* includes the following SOC2010 code: 6141.
The section *Home-based Personal Care Workers (5322)* includes the following SOC2010 codes: 6145, 6146. Data values less than 6,000 are suppressed as they are not considered statistically reliable.. This is in line with ONS guidance on minimum publication thresholds due to sample variation.

Table A3.3 Personal Services Workers

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
AT	**2013**	**Personal Services Workers (51)**	105,700	157,600	263,300	10,100	13,100	23,200	14,000	13,300	27,300	22	3	25	3,563
		***Of which:* Cooks (5120)**	31,700	19,200	50,900	3,800	1,500	5,300	5,300	1,900	7,200	18	1	19	1,055

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Waiters (5131)**	28,300	56,400	84,600	3,400	8,700	12,100	3,800	5,400	9,200	4	1	5	1,634
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	34,200	29,700	63,900	2,200	1,300	3,500	4,200	4,500	8,700	0	0	0	51
		***Of which:* Domestic Housekeepers (5152)**										0	0	0	10
BE	**2013**	**Personal Services Workers (51)**	58,871	87,149	146,020	5,678	8,351	14,029	3,488	3,348	6,836	N/a	N/a	N/a	7,418
		***Of which:* Cooks (5120)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	5,226
		***Of which:* Waiters (5131)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	2,192
		Cleaners and helpers (91)	164,789	295,481	460,270	13,123	35,770	48,893	14,614	16,264	30,878	N/a	N/a	N/a	N/a
		of which: domestic, hotel and office cleaners (911)	22,691	222,343	245,034	2,104	31,209	33,313	4,544	14,029	18,573	N/a	N/a	N/a	20,141
HR	**2014**	**Personal Services Workers (51)**	11,825	14,805	26,630	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	4,846	5995	10,841	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Waiters (5131)**	6,586	4,135	10,721	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	10	214	224	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
CZ	**2011**	**Personal Services Workers (51)**	265, 200	477,900	743,100	1778	1,828	3,606	1,970	2,073	4,043	N/a	2,091	N/a	N/a
		***Of which:* Cooks (5120)**	4,846	5,995	10,841	618	282	900	1,369	547	1,916	N/a	928	N/a	N/a
		Of which:	6,586	4,135	10,721	618	897	1,515	268	462	730	N/a	556	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Waiters (5131)													
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	10	214	224	53	81	134	47	62	109	N/a	38	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	N/a	N/a	N/a	2	3	5	2	16	18	N/a	10	N/a	N/a
DE	**30 June 2014** (for the number of unfilled vacancies: annual average 2014)	**Personal Services Workers (51)**	549,031	602,925	1,151,956	53,604	43,404	97,008	42,241	29,709	71,950	N/a	N/a	N/a	33,520
		***Of which:* Cooks (5120)**	140,121	81,421	221,542	16,194	5,442	21,636	16,611	4,434	21,045	N/a	N/a	N/a	8,507
		***Of which:* Waiters (5131)**	96,478	191,949	288,427	21,480	22,617	44,097	14,648	12,299	26,947	N/a	N/a	N/a	12,543
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	7,112	89,073	96,185	571	4,388	4,959	440	2,498	2,938	N/a	N/a	N/a	1,296
		***Of which:* Domestic Housekeepers (5152)**	891	6,706	7,597	47	341	388	75	203	278	N/a	N/a	N/a	42
EE	**2011, except No of residence permits & No of unfilled vacancies:2014 70**	**Personal Services Workers (51)**	4,025	16,760	20,785	24	52	76	513 (256)	2,188 (1,279)	2,701 (1,535)	57	24	81	3,907
		***Of which:* Cooks (5120)**	1,203	5,408	6,611	12	20	32	265 (136)	1,072 (614)	1,337 (750)	32	2	34	1,680
		***Of which:* Waiters (5131)**	495	2,765	3,260	3	5	8	26 (13)	183 (113)	209 (126)	0	0	0	503
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments**	170	391	561	0	1	1	16 (9)	31 (13)	47 (22)	0	0	0	36

[70] Vacancies during the year 2014. Data of Estonian Unemployment Insurance Fund. This data does not reflect all the vacancies in that time period.

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		(5151)													
		Of which: Domestic Housekeepers (5152)	36	65	101	1	0	1	2 (1)	1 (1)	3 (2)	0	0	0	23
FI	2012 & 2014[71]	Personal Services Workers (51)	43,970	69,601	113,571	1,070	1,157	2,227	3,086	1,291	4,377	456	162	618	N/a
		Of which: Cooks (5120)	12,899	29,397	42,296	421	240	661	1,991	513	2,504	272	28	300	11,781
		Of which: Waiters (5131)	3,741	10,717	14,458	249	254	503	620	354	974	7	6	13	9,764
		Of which: Cleaning and Housekeep services in offices, hotels and other establishments (5151)	1,587	4,305	5,892	57	175	232	121	83	204	173	90	263	1,583
		Of which: Domestic Housekeepers (5152)	260	261	521	5	6	11	13	15	28	4	38	42	13
FR	2012 & 2014 for No of unfilled vacancies	Personal Services Workers (51)	339,528	1,009,481	1,349,010	8,098	78,170	86,268	55,077	120,254	175,332	N/a	N/a	N/a	34,125
		Of which: Cooks (5120)	193,872	122,840	316,712	3,931	3,435	7,366	33,968	16,407	50,376	N/a	N/a	N/a	9,926
		Of which: Waiters (5131)	90,447	150,280	240,728	887	2,082	2,970	15,461	12,375	27,836	N/a	N/a	N/a	6,565
		Of which: Cleaning and Housekeep services in offices, hotels and other establishments (5151)	36,165	51,442	87,607	3,280	13,884	17,164	3,031	8,677	11,708	N/a	N/a	N/a	5,411
		Of which: Domestic Housekeepers	14,124	228,279	242,403	0	47,544	47,544	2,617	37,610	40,227	N/a	N/a	N/a	12,193

[71] 2014: residence permits and unfilled vacancies; 2012: total employment, employment of EU-nationals from other MS and employment of TCN

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		(5152)													
EL	2014	**Personal Services Workers (51)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	11
		***Of which:* Waiters (5131)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	3
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	8
HU	2014	**Personal Services Workers (51)**	62,260	100,395	162,655	212	243	455	1,588	914	2,502	258	132	390	4,365
		***Of which:* Cooks (5120)**	21,207	13,635	34,842	212	0	212	1,540	660	2,200	257	109	366	1,307
		***Of which:* Waiters (5131)**	16,949	21,318	38,267	0	0	0	5	4	9	1	3	4	364
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	387	238	625	0	0	0	0	0	0	0	0	0	13
		***Of which:* Domestic Housekeepers (5152)**	1,037	699	1,736	0	0	0	5	4	8	0	0	0	6
IE	2014	**Personal Services Workers (51)**	N/a	N/a	91,800	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Waiters (5131)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		(5151)													
		Of which: Domestic Housekeepers (5152)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	2014	Personal Services Workers (51)	7.6	30.4	37.9	N/a	N/a	N/a	N/a	N/a	N/a	106	8	114	1,457
		Of which: Cooks (5120)	(2.1)	9.7	11.7	N/a	N/a	N/a	N/a	N/a	N/a	104	8	112	813
		Of which: Waiters (5131)	N/a	N/a	2.7	N/a	N/a	N/a	N/a	N/a	N/a	2	0	2	189
		Of which: Cleaning and Housekeep services in offices, hotels and other establishments (5151)	(2.0)	5.8	7.7	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	116
		Of which: Domestic Housekeepers (5152)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	4
LT	2014	Personal Services Workers (51)	473	2,688	3,161	N/a	N/a	N/a	145	20	165	N/a	N/a	N/a	194
		Of which: Cooks (5120)	153	1,766	1,919	0	1	1	145	17	162	N/a	N/a	N/a	122
		Of which: Waiters (5131)	79	358	437	1	1	2	N/a	1	1	N/a	N/a	N/a	23
		Of which: Cleaning and Housekeep services in offices, hotels and other establishments (5151)	84	24	108	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	30
		Of which: Domestic Housekeepers (5152)	3	2	5	N/a	N/a	N/a	N/a	2	2	N/a	N/a	N/a	27
LU	2014	Personal Services Workers (51)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	51	16	67	N/a
		Of which: Cooks (5120)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Waiters (5131)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	46	6	52	N/a
		Of which: Cleaning and Housekeep	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	5	6	11	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		services in offices, hotels and other establishments (5151)													
		***Of which:* Domestic Housekeepers (5152)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	4	4	N/a
MT	**2014**	**Personal Services Workers (51)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	606	159	765	111	27	138	26	16	42	N/a	N/a	N/a	90
		***Of which:* Waiters (5131)**	3,035	2,786	5,821	574	783	1,357	21	11	32	N/a	N/a	N/a	689
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	19	76	95	5	20	25	4	3	7	N/a	N/a	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	160	394	554	7	35	42	20	49	69	N/a	N/a	N/a	30
NL	**2014**	**Personal Services Workers (51)**	152,000	244,000	396,000	3,000	5,000	8,000	7,000	8,000	15,000	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	44,000	12,000	56,000	N/a	2,000	N/a	3,000	N/a	5,000	N/a	N/a	N/a	N/a
		***Of which:* Waiters (5131)**	41,000	112,000	150,000	2,000	N/a	4,000	3,000	4,000	7,000	N/a	N/a	N/a	N/a
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	152,000	244,000	396,000	3,000	5,000	8,000	7,000	8,000	15,000	N/a	N/a	N/a	N/a
PL	**2014**	**Personal Services Workers (51)**	N/a	N/a	197,285	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,811	679
		***Of which:* Cooks (5120)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,538	N/a
		***Of which:* Waiters (5131)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	25	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Of which: **Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	4	N/a
		Of which: **Domestic Housekeepers (5152)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	8	N/a
PT	**2014**	**Personal Services Workers (51)**	2,224	5,712	7,936	23	69	92	102	309	411				5,725
		Of which: **Cooks (5120)**	511	1,338	1,849	8	18	26	45	86	131				1,617
		Of which: **Waiters (5131)**	1,133	1,845	2,978	11	32	43	51	99	150				2,135
		Of which: **Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	24	340	364	0	5	5	1	34	35				189
		Of which: **Domestic Housekeepers (5152)**	-	17	17	0	1	1	0	1	1				26
SK	**2014**	**Personal Services Workers (51)**	34,412	41,462	75,874	69	62	131	283	195	482	N/a	N/a	N/a	588
		Of which: **Cooks (5120)**	9,132	17,527	26,659	37	10	47	243	49	295	N/a	N/a	N/a	263
		Of which: **Waiters (5131)**	6,964	10,958	17,922	13	16	29	9	13	22	N/a	N/a	N/a	217
		Of which: **Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	2,230	5,071	7,301	1	1	2	1	2	3	N/a	N/a	N/a	11
		Of which: **Domestic Housekeepers (5152)**	12	361	373	0	0	0	0	0	0	N/a	N/a	N/a	0
SI	**2014**	**Personal Services Workers (51)**	14,413	22,752	37,165	217	324	541	813	722	1,535	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to third-country nationals for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Cooks (5120)**	3,889	5,429	9,318	91	57	148	460	171	631	N/a	N/a	258	N/a
		***Of which:* Waiters (5131)**	4,628	8,944	13,572	88	162	250	218	270	488	N/a	N/a	N/a	N/a
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	525	533	1,058	3	7	10	10	9	19	N/a	N/a	78	N/a
		***Of which:* Domestic Housekeepers (5152)**	17	195	212	8	0	8	1	14	15	N/a	N/a	N/a	N/a
SE	**2014 for TCNs and 2013 for EU nationals**	**Personal Services Workers (51)**	11014	20064	31078	10125	19638	29763	889	426	1315	N/a	N/a	N/a	N/a
		***Of which:* Cooks (5120)**	2980	1961	4941	2355	1805	4160	625	156	781	N/a	N/a	N/a	N/a
		***Of which:* Waiters (5131)**	1261	778	2039	1249	767	2016	12	11	23	N/a	N/a	N/a	N/a
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	3883	12507	16390	3768	12433	16201	115	74	189	N/a	N/a	N/a	N/a
		***Of which:* Domestic Housekeepers (5152)**	89	246	335	17	146	163	72	100	172	N/a	N/a	N/a	N/a
UK	**2014**	**Personal Services Workers (51)**	428,000	784,000	1,212,000	45,000	71,000	115,000	31,000	24,000	55,000	86	1	87	43,145***
		***Of which:* Cooks (5120)**	27,000	59,000	86,000	N/a	N/a	7,000	6,000	N/a	9,000	0	0	0	1,854
		***Of which:* Waiters (5131)**	70,000	177,000	247,000	8,000	26,000	34,000	11,000	8,000	19,000	21	0	21	11,128
		***Of which:* Cleaning and Housekeep services in offices, hotels and other establishments (5151)**	18,000	50,000	68,000	N/a	10,000	13,000	N/a	N/a	N/a	0	0	0	1,754
		***Of which:* Domestic Housekeepers (5152)**	N/a	37,000	40,000	N/a	7,000	9,000	N/a	N/a	N/a	0	0	0	1,714

Notes
AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero. No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated. Unfilled vacancies are the annual average of 2013.
BE: For Belgium, we can only deliver ISCO 3 (three digits). The available statistics do not go any further. Regarding *Cleaners and helpers (91)*, we did not fill out the *Occupations 'Cleaning and Housekeeping services in offices, hotels and other establishments (5151)'* and *'Domestic Housekeepers (5152)'*. The ISCO code 5 does not refer to the elementary occupation *'cleaning'* which we find in Belgian statistics. In Belgium, there are indeed statistics for *'Cleaners and Helpers' (91)* and *'Domestic, hotel and office cleaners' (911)* (added in the table above in red). In Belgium third country nationals are predominantly employed in the ISCO codes 7 to 9 (and especially in 9-occupations, i.e. elementary occupations).
CZ: Total Employment: Numbers related to Personal Services Workers include those related to Personal Care. Numbers in the table include employment within aggregation "5" instead of "51", "5120", "5131", "5151" and "5152".
DE: Number of employees subject to social security contribution. Data source: Federal Employment Agency.
EE: () : out of which persons with undetermined citizenship
LV: ( ) : Data are based on small number of respondent answers. … : Data are not available or are too uncertain for presentation
PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.
SK: Total employment statistics are estimates.*Personal Services Workers*: Total for Employment of third-country nationals = 482 persons, includes also 4 persons whose gender was not identified. *Of which: Cooks:* Total for Employment of third-country nationals = 295 persons, includes also 3 persons whose gender was not identified.
UK: The section *Personal Services Workers (51)* includes the following SOC2010 codes: 5435, 6139, 6148, 6214, 6215, 6219, 6221, 6222, 6231, 6232, 6240, 8215, 9236, 9273, and 9274. The section *Cooks (5120)* includes the following SOC2010 code: 5435. The section *Waiters (5131)* includes the following SOC2010 code: 9273. The section *Cleaning and Housekeep services in offices, hotels and other establishments (5151)* includes the following SOC2010 code: 6240. The section *Domestic Housekeepers (5152)* includes the following SOC2010 code: 6231.

Table A3.4 Skilled Agricultural, Forestry and Fishery Workers

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
AT	2013	**Skilled Agricultural, Forestry and Fishery Workers (6)**	115,300	82,400	197,700	1,600	1,400	3,000	1,700	800	2,500	1	0	1	138
		***Of which:* Field Crop and Vegetable Growers (6111)**	44,200	26,100	70,300	800	500	1,200	1,700	700	2,400	0	0	0	0
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**										1	0	1	61
		***Of which:* Livestock and Dairy Producers (6121)**	36,100	30,900	67,000	400	500	800	0	0	0	0	0	0	3
BE	2013	**Skilled Agricultural, Forestry and Fishery Workers (6)**	55,163	10,812	65,975	969	259	1,228	987	80	1,067	N/a	N/a	N/a	N/a
		***Of which:* Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	659
		***Of which:* Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
HR	2014	**Skilled Agricultural, Forestry and Fishery Workers (6)**	677	358	1,035	N/a	N/a	N/a	N/a	N/a	34	N/a	N/a	34	N/a
		***Of which:* Field Crop and Vegetable Growers (6111)**	71	79	150	N/a	N/a	N/a	N/a	N/a	15	N/a	N/a	15	N/a
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	224	186	410	N/a	N/a	N/a	N/a	N/a		N/a	N/a		N/a
		***Of which:* Livestock and Dairy Producers (6121)**	9	14	23	N/a	N/a	N/a	N/a	N/a	19	N/a	N/a	19	N/a
CZ	2011	**Skilled Agricultural, Forestry and Fishery Workers (6)**	42,800	23,600	66,400	474	351	825	406	454	860	N/a	N/a	N/a	175

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	69	108	177	62	125	187	N/a	N/a	N/a	14
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	N/a	111	123	234	38	49	87	N/a	N/a	N/a	43
		***Of which:* Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	130	70	200	164	177	341	N/a	N/a	N/a	61
DE	**30 June 2014** (for the number of unfilled vacancies: annual average 2014)	**Skilled Agricultural, Forestry and Fishery Workers (6)**	168,637	40,486	209,123	7,188	1,059	8,247	4,048	380	4,428	N/a	N/a	N/a	3,725
		***Of which:* Field Crop and Vegetable Growers (6111)**	2,117	1,128	3,245	338	119	457	66	23	89	N/a	N/a	N/a	32
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	104,800	24,980	129,780	4,958	614	5,572	3,634	255	3,889	N/a	N/a	N/a	2,548
		***Of which:* Livestock and Dairy Producers (6121)**	9,529	7,875	17,404	419	112	531	49	34	83	N/a	N/a	N/a	311
EE	**2011, except No of residence permits & No of unfilled vacancies:2014**	**Skilled Agricultural, Forestry and Fishery Workers (6) (22)**	5,599	3,455	9,054	25	6	31	222 (115)	105 (69)	327 (184)	0	0	0	473
		***Of which:* Field Crop and Vegetable Growers (6111)**	635	190	825	2	1	3	4 (3)	9 (5)	13 (8)	0	0	0	0
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	195	382	577	4	1	5	8 (4)	11 (6)	19 (10)	0	0	0	91
		***Of which:* Livestock and Dairy Producers (6121)**	911	2,223	3,134	6	3	9	25 (22)	75 (51)	100 (73)	0	0	0	203
FI	**2012 & 2014[72]**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	45,686	22,700	68,386	N/a	N/a	N/a	640	451	1,091	576	420	996	N/a
		***Of which:* Field Crop and Vegetable Growers (6111)**	8,810	2,447	11,257	65	44	109	45	31	76	10	13	23	9
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	3,786	3,375	7,161	118	166	284	275	267	542	385	309	694	9,463
		***Of which:* Livestock and Dairy Producers (6121)**	11,124	7,981	19,105	295	283	578	174	93	267	5	1	6	431
FR	**2012 & 2014 for No of unfilled vacancies**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	151,886	72,693	224,580	6,323	4,847	11,170	10,731	4,626	15,357	N/a	N/a	N/a	2,108
		***Of which:* Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,038
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	623
		***Of which:* Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	424
EL	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a

[72] 2014: residence permits and unfilled vacancies; 2012: total employment, employment of EU-nationals from other MS and employment of TCN

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Of which: **Fishermen**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,506
		Of which: **Timber shifters**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	2
		Of which: **Slaughterers**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	3
		Of which: **Sperm sheders – sperm receivers of fur animals**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1
		Of which: **Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	7,644
		Of which: **Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1
		Of which: **Apiculture workers**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	2
		Of which: **Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	291
HU		**Skilled Agricultural, Forestry and Fishery Workers (6)**	70,937	26,802	97,739	102	23	125	53	7	60	28	0	28	3,185
		Of which: **Field Crop and Vegetable Growers (6111)**	13,307	5,345	18,653	0	23	23	41	0	41	22	0	22	1,970
		Of which: **Gardeners; Horticultural and Nursery Growers (6113)**	12,764	9,083	21,847	20	0	20	0	0	0	0	0	0	1,190
		Of which: **Livestock and Dairy Producers (6121)**	10,093	3,527	13,620	0	0	0	9	0	9	4	0	4	288
IE	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	N/a	N/a	93,100	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: **Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: **Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: **Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	19.3	10.9	30.1	N/a	N/a	N/a	N/a	N/a	N/a	1	0	1	463
		Of which: **Field Crop and Vegetable Growers (6111)**	N/a	N/a	(1.9)	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	4
		Of which: **Gardeners; Horticultural and Nursery Growers (6113)**	N/a	N/a	(1.6)	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	33
		Of which: **Livestock and Dairy Producers (6121)**	2.1	2.2	4.3	N/a	N/a	N/a	N/a	N/a	N/a	1	0	1	85
LT	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	701	699	1400	0	1	1	N/a	N/a	N/a	N/a	N/a	N/a	0
		Of which: **Field Crop and Vegetable Growers (6111)**	3	2	5	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0
		Of which: **Gardeners; Horticultural and Nursery Growers (6113)**	98	346	444	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1
		Of which: **Livestock and Dairy Producers (6121)**	29	29	58	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	14

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
LU	2014	Skilled Agricultural, Forestry and Fishery Workers (6)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	N/a
		Of which: Field Crop and Vegetable Growers (6111)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	N/a
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	N/a
		Of which: Livestock and Dairy Producers (6121)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	N/a
MT	2014	Skilled Agricultural, Forestry and Fishery Workers (6)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Field Crop and Vegetable Growers (6111)	193	34	227	0	0	0	1	0	1	N/a	N/a	N/a	2
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	302	17	319	4	1	5	6	0	6	N/a	N/a	N/a	20
		Of which: Livestock and Dairy Producers (6121)	182	23	205	0	1	1	0	0	0	N/a	N/a	N/a	N/a
NL	2014	Skilled Agricultural, Forestry and Fishery Workers (6)	124,000	28,000	152,000	N/a	N/a	2,000	2,000	N/a	3,000	N/a	N/a	N/a	N/a
		Of which: Field Crop and Vegetable Growers (6111)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	64,000	11,000	75,000	N/a	N/a	N/a	2,000	N/a	2,000	N/a	N/a	N/a	N/a
		Of which: Livestock and Dairy Producers (6121)	34,000	11,000	45,000	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
PL	2014	Skilled Agricultural, Forestry and Fishery Workers (6)	N/a	N/a	25,763	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	417	54
		Of which: Field Crop and Vegetable Growers (6111)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	166	N/a
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	113	N/a
		Of which: Livestock and Dairy Producers (6121)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	55	N/a
PT	2014	Skilled Agricultural, Forestry and Fishery Workers (6)	2,363	1,267	3,630	69	75	144	82	34	116				2,343
		Of which: Field Crop and Vegetable Growers (6111)	30	10	40	0	0	0	0	0	0				8
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	333	150	483	7	3	10	25	6	31				394
		Of which: Livestock and Dairy Producers (6121)	28	10	38	1	1	2	3	0	3				22
SE	2014 for TCNs and 2013 for EU nationals	Skilled Agricultural, Forestry and Fishery Workers (6)	2658	701	3359	1728	571	2299	930	130	1060	N/a	N/a	N/a	N/a
		Of which: Field Crop and Vegetable Growers (6111)	126	77	203	30	26	56	96	51	147	N/a	N/a	N/a	N/a
		Of which: Gardeners; Horticultural and Nursery Growers (6113)	1026	310	1336	962	291	1253	64	19	83	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		***Of which:* Livestock and Dairy Producers (6121)**	3	0	3	n/a	n/a	n/a	3	0	3	N/a	N/a	N/a	N/a
SK	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	9,781	5,534	15,315	38	12	50	36	39	75	N/a	N/a	N/a	28
		***Of which:* Field Crop and Vegetable Growers (6111)**	813	412	1,225	8	3	11	14	2	16	N/a	N/a	N/a	1
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	725	405	1,130	1	0	1	0	0	0	N/a	N/a	N/a	0
		***Of which:* Livestock and Dairy Producers (6121)**	5,275	2,692	7,967	6	0	6	1	0	1	N/a	N/a	N/a	12
SI	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	24,444	8,040	32,484	43	10	53	202	13	215	N/a	N/a	N/a	N/a
		***Of which:* Field Crop and Vegetable Growers (6111)**	1,833	544	2,377	0	1	1	4	1	5	N/a	N/a	N/a	N/a
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	813	708	1,521	4	2	6	14	2	16	N/a	N/a	N/a	N/a
		***Of which:* Livestock and Dairy Producers (6121)**	5,360	1,486	6,846	1	0	1	13	2	15	N/a	N/a	N/a	N/a
UK	**2014**	**Skilled Agricultural, Forestry and Fishery Workers (6)**	395,000	75,000	470,000	15,000	N/a	19,000	N/a	N/a	N/a	9	1	10	6,252
		***Of which:* Field Crop and Vegetable Growers (6111)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Gardeners; Horticultural and Nursery Growers (6113)**	165,000	30,000	195,000	6,000	N/a	8,000	N/a	N/a	N/a	0	0	0	1,904
		***Of which:* Livestock and Dairy Producers (6121)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a

The table does not include information for BG, CY, RO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports.

Notes

AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero. No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated. Unfilled vacancies are the annual average of 2013.

BE: For Belgium, we can only deliver ISCO 3 (three digits). The available statistics do not go any further.
DE: Number of employees subject to social security contribution. Data source: Federal Employment Agency.

HR: Occupation: grafters in *Skilled Agricultural, Forestry and Fishery Workers (6)* and occupation: shepherds and herders in *Livestock and Dairy Producers (6121).*

EE: () : out of which persons with undetermined citizenship.

IT: Nothing in the report.

LV: ( ) : Data are based on small number of respondent answers. … : Data are not available or are too uncertain for presentation

PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.**SK:** Total employment statistics are estimates.

UK: The section *Agricultural, Forestry and Fishery Workers (6)* includes the following SOC2010 codes: 5111, 5112, 5113, 5114, 5119, 8223, 9111, 9112, and 9119. The section *Field Crop and Vegetable Growers (6111)* includes the following SOC2010 codes: The section *Gardeners; Horticultural and Nursery Growers (6113)* includes the following SOC2010 codes: 5112, 5113, and 5114. The section *Livestock and Dairy Producers (6121)* includes the following SOC2010 code: 5111.

Table A3.5 Information and Communication Technology Professionals

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
AT	2013	**Information and Communications Technology Professionals (25)**	63,100	7,400	70,400	3,600	400	4,000	1,700	200	1,800	77	19	96	384
		***Of which:* Software and Applications Developers and Analysts (251)**	46,000	5,700	51,700	2,500	300	2,800	1,300	200	1,500	72	18	90	356
		***Of which:* Database and Network Professionals (252)**	17,100	1,600	18,700	1,100	100	1,200	400	0	400	5	1	6	28
BE	2013	**Information and Communications Technology Professionals (25)**	77,521	12,303	89,824	5,516	1,668	7,184	1,476	0	1,476	N/a	N/a	N/a	7,511
		***Of which:* Software and Applications Developers and Analysts (251)**	59,897	9,516	69,413	3,931	1,249	5,180	1,368	0	1,368	N/a	N/a	N/a	6,358
		***Of which:* Database and Network Professionals (252)**	17,624	2,787	20,411	1,585	419	2,004	108	0	108	N/a	N/a	N/a	1,153
HR	2014	**Information and Communications Technology Professionals (25)**	352	145	497	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	333	140	473	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Database and Network Professionals (252)**	19	5	24	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
CZ	2011	**Information and Communications Technology Professionals (25)**	N/a	N/a	N/a	3,762	789	4,551	1,248	326	1,574	N/a	N/a	N/a	882
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	N/a	2,817	571	3,388	1,001	249	1,250	N/a	N/a	N/a	734
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	931	213	1,144	247	75	322	N/a	N/a	N/a	112
DE	**30 June 2014** (for the number of unfilled vacancies: annual average 2014)	**Information and Communications Technology Professionals (25)**	366,670	67,066	433,736	12,681	3,078	15,759	12,799	3,526	16,325	N/a	N/a	N/a	7,905
		***Of which:* Software and Applications Developers and Analysts (251)**	295,659	57,435	353,094	10,895	2,748	13,643	11,612	3,228	14,840	N/a	N/a	N/a	6,790
		***Of which:* Database and Network Professionals (252)**	71,011	9,631	80,642	1,786	330	2,116	1,187	298	1,485	N/a	N/a	N/a	1,115
EE	**2011, except No of residence permits & No of unfilled vacancies:2014**	**Information and Communications Technology Professionals (25)**	5,724	1,707	7,431	106	7	113	494 (243)	79 (19)	573 (262)	95	12	107	143
		***Of which:* Software and Applications Developers and Analysts (251)**	3,994	1095	5,089	90	5	95	409 (203)	55 (12)	464 (215)	40	4	44	103
		***Of which:* Database and Network Professionals (252)**	1,614	557	2,171	16	1	17	83 (39)	22 (6)	105 (45)	38	2	40	40

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
FI	2012 & 2014[73]	**Information and Communications Technology Professionals (25)**	29314	8902	38216	639	81	720	624	152	776	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	25030	7827	32857	580	75	655	577	144	721	N/a	N/a	N/a	4786
		***Of which:* Database and Network Professionals (252)**	4284	1075	5359	59	6	65	47	8	55	N/a	N/a	N/a	1197
FR	2012 & 2014 for No of unfilled vacancies	**Information and Communications Technology Professionals (25)**	309,855	85,160	395,015	11,481	950	12,431	21,508	13,073	34,581	N/a	N/a	N/a	3,957
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	242
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	2,215
HU	2014	**Information and Communications Technology Professionals (25)**	42,559	5,779	48,338	1,054	266	1,320	271	49	320	119	25	144	310
		***Of which:* Software and Applications Developers and Analysts (251)**	28,812	5,281	34,092	788	266	1,054	229	32	261	94	21	115	222
		***Of which:* Database and Network Professionals (252)**	13,747	499	14,246	266	0	266	44	15	59	25	4	29	88
IE	2014	**Information and Communications Technology Professionals (25)**	N/a	N/a	43.400	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	2014	**Information and Communications Technology Professionals (25)**	7.7	2.9	20.5	N/a	N/a	N/a	N/a	N/a	N/a	102	22	124	194
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	5.2	N/a	N/a	N/a	N/a	N/a	N/a	72	11	83	116
		***Of which:* Database and Network Professionals (252)**	3.7	(1.6)	5.3	N/a	N/a	N/a	N/a	N/a	N/a	30	11	41	78
LT	2014	**Information and Communications Technology Professionals (25)**	82	29	11	N/a	N/a	N/a	19	5	24	N/a	N/a	N/a	10
		***Of which:* Software and Applications Developers and Analysts (251)**	47	3	50	N/a	N/a	N/a	17	5	22	N/a	N/a	N/a	4
		***Of which:* Database and Network**	35	26	61	N/a	N/a	N/a	2	N/a	2	N/a	N/a	N/a	31

[73] 2014: residence permits and unfilled vacancies; 2012: total employment, employment of EU-nationals from other MS and employment of TCN

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
		Professionals (252)													
LU	**2014**	**Information and Communications Technology Professionals (25)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	54	10	64	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	27	3	30	N/a
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	27	7	34	N/a
MT	**2014**	**Information and Communications Technology Professionals (25)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	1,227	218	1,445	231	27	258	66	13	79	N/a	N/a	N/a	107
		***Of which:* Database and Network Professionals (252)**	819	164	983	120	31	151	30	4	34	N/a	N/a	N/a	275
NL	**2014**	**Information and Communications Technology Professionals (25)**	219,000	28,000	248,000	6,000	2,000	7,000	5,000	N/a	7,000	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	16,000	18,000	178,000	5,000	N/a	6,000	3,000	N/a	4,000	N/a	N/a	N/a	N/a
		***Of which:* Database and Network Professionals (252)**	50,000	9,000	59,000	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
PL	**2014**	**Information and Communications Technology Professionals (25)**	N/a	N/a	101,474	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	417	1,452
		***Of which:* Software and Applications Developers and Analysts (251)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	92	N/a
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	102	N/a
PT	**2014**	**Information and Communications Technology Professionals (25)**	616	135	751	3	2	5	5	3	8				368
		***Of which:* Software and Applications Developers and Analysts (251)**	506	121	627	3	2	5	4	3	7				20
		***Of which:* Database and Network Professionals (252)**	91	10	101	0	0	0	1	0	1				55
SK	**2014**	**Information and Communications Technology Professionals (25)**	22,476	4,907	27,383	122	26	148	110	22	134	N/a	N/a	N/a	42
		***Of which:* Software and Applications Developers and Analysts (251)**	14,204	3,338	17,542	90	21	111	85	15	102	N/a	N/a	N/a	32
		***Of which:* Database and Network Professionals (252)**	8,272	1,569	9,841	32	5	37	25	7	32	N/a	N/a	N/a	10
SI	**2014**	**Information and Communications Technology Professionals (25)**	9,592	1,911	11,503	110	22	132	98	30	128	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications**	8,132	1,335	9,467	93	16	109	84	25	109	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
		Developers and Analysts (251)													
		***Of which:* Database and Network Professionals (252)**	1,460	576	2,036	17	6	23	14	5	19	N/a	N/a	N/a	N/a
SE	**2014 for TCNs and 2013 for EU nationals**	**Information and Communications Technology Professionals (25)**	7018	2322	9340	6465	2226	8691	553	96	649	N/a	N/a	N/a	N/a
		***Of which:* Software and Applications Developers and Analysts (251)**	169	26	195	n/a	n/a	n/a	169	26	195	N/a	N/a	N/a	N/a
		***Of which:* Database and Network Professionals (252)**	257	48	305	n/a	n/a	n/a	257	48	305	N/a	N/a	N/a	N/a
UK	**2014**	**Information and Communications Technology Professionals (25)**	893,000	185,000	1,078,000	43,000	14,000	57,000	66,000	14,000	81,000	28,816	5,398	34,214	23,300
		***Of which:* Software and Applications Developers and Analysts (251)**	714,000	137,000	851,000	40,000	12,000	51,000	58,000	11,000	69,000	28,688	5,387	34,075	14,741
		***Of which:* Database and Network Professionals (252)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a

The table does not include information for BG, RO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports.

Notes
AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero. No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated. Unfilled vacancies are the annual average of 2013.
BE: For Belgium, we can only deliver ISCO 3 (three digits). The available statistics do not go any further.
DE: Number of employees subject to social security contribution. Data source: Federal Employment Agency.
EE: () : out of which persons with undetermined citizenship.
IT: Nothing in the report.
LV: ( ) : Data are based on small number of respondent answers. … : Data are not available or are too uncertain for presentation.
LU: The section *Software and Applications Developers and Analysts (251)* includes 1 female and 15 male individuals who were granted a Blue Card residence permit. Source: Directorate of Immigration, 2015. The section *Database and Network Professionals (252*) includes 2 females and 10 male individuals who were granted a Blue Card residence permit. Source: Directorate of Immigration, 2015.
PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.
SK: Total employment statistics are estimates. *Information and Communications Technology Professionals*:Total for Employment of third-country nationals = 134 persons, includes also 2 persons whose gender was not identified. *Of which: Software and Applications Developers and Analysts* :Total for Employment of third-country nationals = 102 persons, includes also 2 persons whose gender was not identified.**UK:** The section *Information and Communications Technology Professionals (25)* includes the following SOC2010 codes: 2133, 2134, 2135, 2136, 2137, 2139, 3131, 3132, and 5245. The section *Software and Applications Developers and Analysts (251)* includes the following SOC2010 codes: 2133, 2134, 2135, 2136, 2137, and 2139.

Table A3.6 Teaching Professionals

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
AT	**2013**	**Teaching professionals (23)**	58,200	142,700	200,900	2,300	7,500	9,800	2,100	2,700	4,900	18	23	41	188
		Engineering Professionals	33,000	5,100	38,100	2,300	800	3,100	500	0	500	39	15	54	161

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		(excluding Electro-technology) (214)													
		Architects, Planners, Surveyors and Designers (216)	18,900	14,500	33,400	1,400	2,100	3,500	200	100	300	18	14	32	55
		Accountants (2411)	31,500	19,300	50,800	1,000	1,400	2,400	600	0	600	6	5	11	16
BE	2013	Teaching professionals (23)	86,135	213,138	199,273	3,740	5,777	9,517	625	1,096	1,721	N/a	N/a	N/a	15,014
		Engineering Professionals (excluding Electro-technology) (214)	35,896	6,301	42,197	3,686	1,325	5,011	839	374	1,213	N/a	N/a	N/a	9,862
		Architects, Planners, Surveyors and Designers (216)	27,808	16,992	44,800	2,127	2,178	4,305	N/a	N/a	N/a	N/a	N/a	N/a	10,502
		Accountants (2411)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,214
HR	2014	Teaching professionals (23)	1,921	11,480	13,401	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	1,185	1,033	2,218	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Architects, Planners, Surveyors and Designers (216)	1,011	1,119	2,130	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Accountants (2411)	9	27	36	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
CZ	2011	Teaching professionals (23)	N/a	N/a	N/a	1,875	1,568	3,443	777	841	1,618	N/a	N/a	N/a	538
		Engineering Professionals (excluding Electro-technology) (214)	N/a	N/a	N/a	1,158	285	1,443	268	58	326	N/a	N/a	N/a	489
		Architects, Planners, Surveyors and Designers (216)	N/a	N/a	N/a	175	101	276	41	28	69	N/a	N/a	N/a	52
		Accountants (2411)	N/a	N/a	N/a	333	333	666	77	72	149	N/a	N/a	N/a	102
DE	**30 June 2014** (for the number of unfilled vacancies: annual average 2014)	Teaching professionals (23)	236,999	329,624	566,623	9,108	11,971	21,079	11,862	10,397	22,259	N/a	N/a	N/a	2,648
		Engineering Professionals (excluding Electro-technology) (214)	438,358	76,950	515,308	16,464	3,842	20,306	15,040	11,938	3,102	N/a	N/a	N/a	7,257
		Architects, Planners, Surveyors and Designers (216)	74,326	63,805	138,131	3,407	2,767	6,174	3,534	2,062	1,472	N/a	N/a	N/a	1,740
		Accountants (2411)	65,494	51,470	116,964	1,598	1,632	3,230	912	1,368	2,280	N/a	N/a	N/a	884
EE	**2011, except No of residence permits & No of unfilled vacancies:2014**	Teaching professionals (23)	4,796	25,638	30,434	121	85	206	272 (89)	1,503 (564)	1,775 (653)	32	18	50	702
		Engineering Professionals (excluding Electro-technology) (214)	3,379	1,461	4,840	26	8	34	451 (176)	166 (55)	617 (231)	1	1	2	140

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Architects, Planners, Surveyors and Designers (216)	2,264	2,029	4,293	25	7	32	143 (57)	89 (44)	232 (101)	0	0	0	80
		Accountants (2411)	842	9,791	10,633	10	13	23	51 (16)	496 (208)	547 (224)	1	3	4	0
FI	**2014**[74]	**Teaching professionals (23)**	37,212	91,158	128,370	1,124	975	2,099	889	701	1,590	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	37,422	7,091	44,513	411	91	502	326	94	420	N/a	N/a	N/a	5,866
		Architects, Planners, Surveyors and Designers (216)	8,284	5,403	13,687	126	74	200	80	51	131	N/a	N/a	N/a	764
		Accountants (2411)	4,839	9,149	13,988	48	48	96	41	58	99	N/a	N/a	N/a	585
FR	**2012 & 2014 for No of unfilled vacancies**	**Teaching professionals (23)**	124,811	414,933	539,745	2,529	6,587	9,116	3,039	4,265	7,304	N/a	N/a	N/a	5,054
		Engineering Professionals (excluding Electro-technology) (214)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,156
		Architects, Planners, Surveyors and Designers (216)	8,694	9,025	17,720	0	447	447	851	971	1,822	N/a	N/a	N/a	1,543
		Accountants (2411)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1,165
EL		**Teaching professionals (23)**	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Others	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	30
HU	**2014**	**Teaching professionals (23)**	45,993	160,765	206,758	64	468	532	16	44	60	0	21	21	357
		Engineering Professionals (excluding Electro-technology) (214)	38,341	9,263	47,604	295	0	295	383	37	420	114	21	135	4,050
		Architects, Planners, Surveyors and Designers (216)	17,199	7,995	25,194	0	133	133	18	0	18	11	0	11	84
		Accountants (2411)	5,303	8,725	14,028	383	0	383	26	0	26	8	0	8	31
IE	**2014**	**Teaching professionals (23)**	N/a	N/a	89,900	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	N/a	N/a	23,800	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Architects, Planners,	N/a	N/a	12,300	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a

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Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Surveyors and Designers (216)													
		Accountants (2411)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LV	2014	Teaching professionals (23)	6,000	35,400	41,400	N/a	N/a	N/a	N/a	N/a	N/a	22	36	58	380
		Engineering Professionals (excluding Electro-technology) (214)	6,100	3,600	9,600	N/a	N/a	N/a	N/a	N/a	N/a	30	2	32	218
		Architects, Planners, Surveyors and Designers (216)	N/a	N/a	4,200	N/a	N/a	N/a	N/a	N/a	N/a	0	0	0	29
		Accountants (2411)	N/a	N/a	3,000	N/a	N/a	N/a	N/a	N/a	N/a	6	5	11	11
LT	2014	Teaching professionals (23)	62	770	832	N/a	N/a	N/a	9	6	15	N/a	N/a	N/a	29
		Engineering Professionals (excluding Electro-technology) (214)	177	120	297	1	0	1	9	N/a	N/a	N/a	N/a	N/a	9
		Architects, Planners, Surveyors and Designers (216)	50	77	127	N/a	N/a	N/a	2	2	4	N/a	N/a	N/a	27
		Accountants (2411)	27	422	449	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
LU	2014	Teaching professionals (23)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	6	15	21	N/a
		Engineering Professionals (excluding Electro-technology) (214)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	13	5	18	N/a
		Architects, Planners, Surveyors and Designers (216)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	1	0	1	N/a
		Accountants (2411)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	35	38	73	N/a
MT	2014	Teaching professionals (23)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	540	55	595	53	2	55	4	1	5	N/a	N/a	N/a	26
		Architects, Planners, Surveyors and Designers (216)	836	240	1076	93	33	126	31	6	37	N/a	N/a	N/a	43
		Accountants (2411)	1,384	1,154	2,538	70	55	125	43	51	94	N/a	N/a	N/a	157
NL	2014	Teaching professionals (23)	137,000	257,000	394,000	3,000	6,000	9,000	2,000	4,000	6,000	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	80,000	7,000	87,000	2,000	N/a	3,000	2,000	N/a	2,000	N/a	N/a	N/a	N/a
		Architects, Planners, Surveyors and Designers (216)	57,000	27,000	84,000	2,000	2,000	4,000	N/a	N/a	2,000	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
		Accountants (2411)	57,000	24,000	81,000	N/a	N/a	N/a	N/a	N/a	2,000	N/a	N/a	N/a	N/a
PL	2014	Teaching professionals (23)	N/a	N/a	868,992	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	165	536
		Engineering Professionals (excluding Electro-technology) (214)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	131	N/a
		Architects, Planners, Surveyors and Designers (216)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	31	N/a
		Accountants (2411)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	15	N/a
PT	2014	Teaching professionals (23)	186	982	1168	0	1	1	1	2	3				698
		Engineering Professionals (excluding Electro-technology) (214)	496	165	661	0	1	1	1	0	1				412
		Architects, Planners, Surveyors and Designers (216)	330	388	718	4	1	5	0	1	1				330
		Accountants (2411)													0
SK	2014	Teaching professionals (23)	25,828	99,001	124,829	333	149	483	106	102	208	N/a	N/a	N/a	79
		Engineering Professionals (excluding Electro-technology) (214)	24,078	5,948	30,026	273	26	300	85	11	97	N/a	N/a	N/a	87
		Architects, Planners, Surveyors and Designers (216)	2,854	2,187	5,041	5	7	12	5	1	6	N/a	N/a	N/a	5
		Accountants (2411)	3,976	21,325	25,301	54	40	96	32	31	63	N/a	N/a	N/a	33
SI	2014	Teaching professionals (23)	8,519	37,658	46,177	122	147	269	42	76	118	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	10,189	2,575	12,764	110	10	120	72	19	91	N/a	N/a	N/a	N/a
		Architects, Planners, Surveyors and Designers (216)	2,492	2,295	4,787	32	16	48	19	6	25	N/a	N/a	N/a	N/a
		Accountants (2411)	672	3,527	4,199	5	11	16	5	6	11	N/a	N/a	N/a	N/a
SE	2014 for TCNs and 2013 for EU nationals	Teaching professionals (23)	6147	9662	15809	6056	9575	15631	91	87	178	N/a	N/a	N/a	N/a
		Engineering Professionals (excluding Electro-technology) (214)	1127	2023	3150	648	1920	2568	479	103	582	N/a	N/a	N/a	N/a
		Architects, Planners, Surveyors and Designers (216)	284	320	604	280	320	600	4	0	4	N/a	N/a	N/a	N/a
		Accountants (2411)	470	1048	1518	463	1035	1498	7	13	20	N/a	N/a	N/a	N/a

Country	Year	Specific occupations	Total employment			Employment of EU-nationals from other Member States			Employment of third-country nationals			Number of residence permits issued to TCN for specific occupations			Number of unfilled vacancies
			Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	
UK	2014	**Teaching professionals (23)**	453,000	983,000	1,436,000	16,000	38,000	53,000	14,000	30,000	43,000	1,131	1,062	2,193	20,566
		Engineering Professionals (excluding Electro-technology) (214)	416,000	45,000	461,000	20,000	7,000	27,000	18,000	N/a	19,000	4,595	679	5,274	12,321
		Architects, Planners, Surveyors and Designers (216)	228,000	68,000	296,000	12,000	7,000	19,000	N/a	N/a	N/a	369	234	603	6,116
		Accountants (2411)	131,000	97,000	229,000	N/a	N/a	7,000	N/a	6,000	12,000	1,372	1,157	2,529	2,339

The table does not include information for BG, CY, PT, RO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports.

Notes

AT: Employment statistics are the annual average of 2013. The numbers are rounded to the nearest 100. Numbers below 500 cannot with adequate certainty be taken to be different from zero. No breakdown of issued residence permits by occupation is available. Instead, the number of positive certificates for TCNs issued by the Public Employment Service Austria is indicated. Unfilled vacancies are the annual average of 2013.

BE: For Belgium, we can only deliver ISCO 3 (three digits). The available statistics do not go any further.

DE: Number of employees subject to social security contribution. Data source: Federal Employment Agency.

EE: () : out of which persons with undetermined citizenship.

IT: Nothing in the report.

LV: ( ) : Data are based on small number of respondent answers. … : Data are not available or are too uncertain for presentation.

PT: Institute for Employment and Professional Training (IEFP, I.P.) does not have statistics on employment and as such is providing information on placements in 2014.

SK: Total employment statistics are estimates. Teaching professionals: Total for Employment of EU-nationals from other MS = 483 persons, includes also 1 person whose gender was not identified. Engineering Professionals (excluding Electro-technology):Total for Employment of EU-nationals from other MS = 300 persons, includes also 1 person whose gender was not identified and Total for Employment of third-country nationals = 97 persons, includes also 1 person whose gender was not identified. Accountants: Total for Employment of EU-nationals from other MS = 96 persons, includes also 2 persons whose gender was not identified.

UK: The section *Teaching Professionals (23)* includes the following SOC2010 codes: 2311, 2312, 2314, 2315, 2316, 2318, 2319, and 3414. The section *Engineering Professionals (excluding Electro-technology) (214)* includes the following SOC2010 codes: 2121, 2122, 2126, 2127, 2129, 2433, and 2461. The section *Architects, Planners, Surveyors and Designers (216)* includes the following SOC2010 codes: 2431, 2432, 2434, 2435, 2436, 3421. The section *Accountants (2411)* includes the following SOC2010 codes: 2421 and 3535.

Annex 4 Top 15 Professionals included in lists of shortage occupations

Table A4.1 Top 15 Professionals included in lists of shortage occupations and ISCO-08 codes in brackets by country (statistics for the last year available) – ISCO-08 (4 digit level)

MS	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AT	2015	Metal working machine tool setters and operators – Metal turners (7223)	(Asphalt) Roofers (7121)	Metal working machine tool setters and operators – Milling machinists (7223)	Agricultural and machinery mechanics (7233)	Roofers (7126)	Mechanical engineering technicians (3115)	(High-voltage) electrical engineering technicians (3113)	Welders and flame cutters (7212)	Toolmakers and related workers – Tool, die and punch makers (7222)	(Other) Sheet metal workers (7213)	(Other) Electrical mechanics (7412)	Nursing professionals (3221)	N/a	N/a	N/a
HR	2015	Livestock farm labourer (9212)	Field crop and vegetable growers (6111)	Fitness and recreation instructors and program leaders (3423)	Travel consultants and clerks (4221)	Chefs (3434)	Beauticians and related workers (5142)	Musicians, singers and composers (2652)	Dancers and choreographers (2653)	Specialist medical practitioners (2212)	Generalist medical practitioners (2211)	2310 University and higher education teachers (2310)	Heavy truck and lorry drivers (8332)	Glass makers, cutters, grinders and finishers (7315)	Mechanical engineering technicians (3114)	Electronic engineering technicians (3115)
CZ	2014	Crop farm labourers (9211)	Heavy truck and lorry drivers (8332)	Security guards (5414)	Metal working machine tool setters and operators (7223)	Commercial sales representatives (3322)	Sweepers and related labourers (9613)	Welders and flame cutters (7212)	Building construction labourers (9313)	Sewing, embroidery and related workers (7533)	Cooks (5120)	Bricklayers and related workers (7112)	Toolmakers and related workers (7222)	Specialist medical practitioners (2212)	Assemblers not elsewhere classified (8219)	Insurance representatives (3321)
EE	2013	Drivers and mobile plant operators (83)	Business and administration associate professionals (33)	Production and specialized services manager (13)	Science and engineering associate professionals (31)	Sales workers (52)	Metal, machinery and related trades workers (72)	Teaching professionals (23)	Building and related trades workers, excluding electricians (71)	Personal service workers (51)	Business and administration professionals (24)	Refuse workers and other elementary workers (96)	Stationary plant and machine operators (81)	Cleaners and helpers (91)	Science and engineering professionals (21)	Food processing, wood working, garment and other craft and related trades workers (75)
ES	2015	Athletes and sport players (3421)	Sport coaches (3422)	Ships´ engineers (3151)	Ships´ pilots (3152)	Ships´ cooks (5120)	Ships´ deck crew (8350)	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
FI	2014	Contact centre salespersons (5244)	Specialist medical practitioners (2212)	Dentists(2261)	Generalist medical Practitioners (2211)	Commercial sales representatives (3322)	Audiologists and speech therapists(2266)	Nursing associate Professionals (3221)	Social work and counselling professionals(2635)	Special needs teachers(2352)	Nursing professionals(2221)	Psychologists(2634)	Dental assistants and therapists (3251)	Early childhood educators (2342)	N/a	N/a
HU	2014	Mining and Quarrying Labourers (9311)	Assemblers (8219)	Mechanical Machinery Assemblers (8211)	Crop Farm Labourers (9211)	Heavy Truck and Lorry Drivers (8332)	Shop Sales assistants (5223)	Forestry and Related workers (6210)	Elementary workers (9629)	Hand Packers (9321)	Paper-pulp Plant Operators (8142)	Freight Handlers (9333)	Rubber Products Machine Operators (8141)	Toolmakers and related workers (7222)	Welders (7212)	Metal Finishing, Plating and Coating Machine Operators (8122)

MS	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LV	2014	Software developers (2512)	Information and communications technology operations technicians (3511)	Film, stage and related directors and producers (2654)	Packer (manual work) (9321)	Business services agents not elsewhere classified (3339)	Engineering professionals not elsewhere classified (2149)	Construction managers (1323)	Waiters (5131)	Agricultural and industrial machinery mechanics and repairers (7233)	Shop sales assistants (5223)	Primary school teachers (2341)	Geologists and geophysicists (2114)	Early childhood educators (2342)	Gardeners, horticultural and nursery growers (6113)	Building frame and related trades workers not elsewhere classified (7119)
PT	2014	Sewing machine operators (8153)	Waiters (1513)	Commercial sales representatives (3322)	Shop sales assistants (5223)	Kitchen helpers (9412)	Manufacturing labourers not elsewhere classified (9329)	Helpers and cleaners in offices and other establishments (9112)	Cooks (5120)	Bricklayers and related work (7112)	General office clerks (4110)	Market oriented crop (6130)	Structural method preparers (7214)	Food service counter attendant (5246)	Security guards (5414)	Home based personal care (5322)

The table does not include information for BG, CY, ES, PT, RO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports. Statistics regarding the number of non EU professionals per shortage occupations is not available for FR.

Notes

CZ: Source: Central Register of Vacancies.

EE: Labour Demand Forecast 2013-2022; sub level ISCO 2 digit available

FI: The Ministry of Employment and the Economy. The national occupational barometer, shortage occupations 2014 (MEE compiles a national occupational barometer on the basis of the barometers prepared by the Employment and Economic Development Offices in their regions)

LV: Labour market short-term forecast for 2nd half of 2014

Table A4.2 Top 15 Professionals included in lists of shortage occupations by country and number of estimated unfilled vacancies in brackets (statistics for the last year available)– Equivalent national classification

MS	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BE: Wallonia (Based on Rome 5 codes)	2013	Electrician installer (1,769)	Automobile mechanic (1,730)	Nurse (general care) (1,590)	ICT developer, analyst, Web developed (1,311)	Maintenance mechanic (1,299)	Sales representative in professional equipment (1,296)	Cook (1,127)	Sales person (1,124)	Sales representative in business services (1,052)	Technician in machining systems (metal) (1,043)	Site manager (871)	Slater (855)	Assembler sanitary and heating (803)	Construction engineer (702)	Sales representative in commercial consumption goods (649)
BE: Flanders	2014	Cleaner (14,714)	Sales Representative (7,744)	Teacher secondary education (6,473)	Commercial back office co-worker (5,148)	Nurse (4,800)	Co-worker call-centre (4,387)	Analyst developer (ICT) (3,423)	Maintenance mechanic (3,376)	Cleaner (of spaces and rooms) (3,251)	Teacher pre and primary school (2,916)	Sit manager (2,572)	Co-worker kitchen (2,010)	Shop manager small and detail trade (1,970)	Nursing auxiliary/Care worker (1,574)	Electrical installer (1,415)
BE: Brussels Capital Region	2013	Teacher secondary education (1,699)	Administrative clerk, reception & communi	Teacher primary education (637)	Sales person & business manager (550)	IT professional (496)	Sales representatives (454)	Engineers & technical engineers (448)	Care personnel (439)	Secretary (392)	Technician in natural and applied sciences	Room waiters and servers (232)	Accountants & assistant accountants (213)	Preschool teacher (196)	Nurses & assistant nurses (190)	Clerk financial transactions and insurance transaction

MS	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			cation (839)								(372)					s (118)
HR	2015	Shepherds, herders	Grafters	Tourist program leaders and diving instructors	Travel representatives	Chefs (national cuisines)	Specialized masseurs	Opera singers and orchestra musicians	Ballet dancers	Specialist medical doctors	Generalist medical doctors	Foreign language lecturers	Long-distance truck drivers	Glass blowers	Mechanics for Shima weaving machines	Programmers for Shima weaving machines
EL	2014	Fishermen	Animators	Masseurs Ayurveda	Therapists Ayurveda	Tattooers	Mosaic craftsman	Office clerk of Russian-Ukrainian language	Assistant diving instructor	Skilled confectioner	Livestock workers	Domestic housekeepers	Expert therapists method Lulur	Special culinary	Hotel employee	Apiculture workers
LV	2014	Electrical and electronic trades workers (74)	Information and communications technology professionals (25)	Market-oriented skilled agricultural workers (61)	Drivers and mobile plant operators (83)	Science and engineering professionals (21)	Science and engineering associate professionals (31)	Production and specialised services managers (13)	Food processing, woodworking, garment and other craft and related trades workers (75)	Stationary plant and machine operators (81)	Health associate professionals (32)	Information and communications technicians (35)	Metal, machinery and related trades workers (72)	Assemblers (82)	Handicraft and printing workers (73)	Numerical and material recording clerks (43)
LT	2014	Welder	Ship hull assembler	Tailor	Cook	International freight vehicle driver	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
MT	2014	Child care workers (1659)	Cleaners and helpers in offices, hotels and other establishments (931)	Waiters (814)	Shop sales assistants (442)	Security Guards (425)	Teaching professionals not elsewhere classified (399)	Messengers, package deliverers and luggage porters (334)	Health care assistants (309)	Sales demonstrators (280)	Accounting and bookkeeping clerks (276)	Chefs (272)	Product graders and testers (excl. foods & beverages (269)	Building construction labourers (261)	Building and related electricians (258)	General office clerks (245)
NL	2014	Mechanic/Service Technician	Specialised welder	Process control engineer	CNC operator	Auto body repair technician	Pipe fitter industrial installation	Inspector of technical installations	(Draughtsman)Planning engineer mechanical engineering, electrical engineering	Draughtsman/structural engineer mechanical engineering, machines/tools, electrical and mechanical engineering	Calculator mechanical engineering, electrical engineering	Technical commercial personnel: Buyers/salesmen of technical products	Optician, hearing care professional	Gardener	Road transport planner	Ship's Engineer
PL	2014	Building caretaker (515303)	Office technician (411004)	Sales representative (332203)	Disabilities services officer (341202)	Unlicensed protective services worker (541307)	Heavy truck driver (833203)	Contact centre salesperson (524404)	Contact centre information clerk (422201)	Customer adviser (524902)	MAG welder (721204)	Stock clerk (432103)	Tractor unit driver (833202)	Driver – lifting truck operator (834401)	Kitchen helper (941201)	Sale assistant in the food industry (522304)
SI	2014	Drivers of heavy lorries and Tractor	Welders	Toolmakers	Wood turners	Electricians	Cooks	Masons	Waiters	Butchers	Carpenters	Bakers	Mechanical engineering	Insulation workers	Electro mechanics	Compilers and assemblers of metal

MS	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		units											technician			constructions
SE	2014	Mining and metallurgical technicians (3116, Ingenjörer och tekniker inom gruvteknik och metall)	Doctors (2211, läkare)	Nurses - psychiatric care (2225, Sjuksköterskor, psykiatrisk vård)	Engineers - building and construction (2142, Civilingenjörer, bygg och anläggning)	Mining engineers, metallurgists and related professions (2146, Civilingenjörer, gruvteknik och metallurgi)	IT architects (2511, IT-arkitekter)	Nurses - operating room (2231, Operationssjuksköterskor)	Nurses - geriatric (2227, Geriatriksjuksköterskor)	Cooks, chefs (5120, Kockar)	IT testers, test analysts (2514, Testare och testledare)	Preschool teachers (2343, Förskollärare)	Nurses - emergency care (2226, Sjuksköterskor inom akutsjukvård)	Software/ systems engineers /developers (2512, Mjukvaru- och systemutvecklare)	Special education teachers (2351, Speciallärare/ specialpedagoger)	Engineers - building services/technical building (3112, Byggnadsingenjörer och byggnadstekniker)

The table does not include information for BG, CY, PT, RO and NO as no National Reports have been submitted by these countries and only those Member States which have provided statistics in their National Reports.

Notes
HR: Source: Official Quota list.
FR: Nothing in the report.
IE: Occupations with "high" level shortages as identified in the National Skills Bulletin 2014.
UK: UK's shortage occupation list contains 32 different occupational groups (plus extra occupational group and job titles for Scotland only). It is not possible to differentiate between the top 15 and the remaining shortage occupations; the decision to place an occupation on the recommended SOL is a binary one for each occupation/job title in isolation – there is no relative assessment. [75]
LV: These data are forecasts of the expected occupation shortages for the year 2020 calculated in 2014. The group code 2 –digits is indicated in the brackets, according to ISCO-08.
SE; Source: Arbetsförmedlingen (the Public Employment Service), 2014

[75] **UK:** 17 left: 2229 Therapy professionals n.e.c., 2314 Secondary education teaching professionals,2425 Actuaries, economists and statisticians, 2442 Social workers, 2461 Quality control and planning engineers, 3113 Engineering technicians, 3213 Paramedics, 3411 Artist, 3414 Dancers and choreographers, 3415 Musicians, 3416 Arts officers, producers and directors, 3421 Graphic designers, 3541 Buyers and purchasing officers, 5215 Welding trades, 5223 Metal working production and maintenance fitters, 5249 Electrical and electronic trades n.e.c., 5434 Chefs, 2211 Medical practitioners, 2231 Nurses and midwives, 2217 Medical radiographer