Poland: Mismatch priority occupations

ICT specialists belong to high shortage occupations for Poland.

Looking at past, current and future trends (3-4 years), a number of occupations have been identified as mismatch priority occupations for Poland, i.e. they are either in shortage of surplus. Shortage occupation: an occupation that is in short supply of workers, and for which the employers typically face difficulties finding a suitable candidate. Surplus occupation: an occupation for which there are plenty of
suitable workers available but low demand. The employers have no problems filling such posts.

The list below is based on an assessment of the labour market of **Poland**. The occupations presented are not given any rank. All of them present high mismatch.

### Mismatch priority occupations

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**Poland**

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#### Shortage occupations

- ICT specialists
- Healthcare specialists
- Managers
- Science and engineering professionals
- Skilled manual workers
- Teaching professionals

#### Surplus occupations

- Market-oriented skilled forestry and fishery workers
- Food processing workers
- Wood working workers
- Garment and other craft and trade related workers
- Social, cultural and related associate professionals

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**Shortage Occupations**

**ICT specialists** [1]

The Polish ICT sector accounts for about 250 thousand jobs, and when specialists working outside the ICT sector are taken into account, it is approx. 400 thousand jobs. [2] Greatest shortages are observed in relation to programmers, network and computer systems administrators, installers and servicing of
computer systems. Employment in the ICT sector is growing at a pace of nearly 10% per year. Shortages result from three overlapping factors. While the number of graduates from all forms of education covers the current demand for new workers in the ICT sector, the quality of education is not always tailored to the needs of the market. This is particularly noticeable in the case of vocational education, where training programmes are based on the core curriculum developed before 2012, resulting in education not entirely corresponding to the current state of developments in ICT. The second factor stems from the spread of ICT technologies across all economic sectors. As a result, most ICT specialists in Poland are employed by the e-commerce sector, banking and public administration, sectors which often offer better working conditions than ICT companies. The third factor is the difference in salaries between Poland and Western European countries, which means that in the absence of other barriers, specialists, especially those that are highly qualified, often decide to work abroad. The combination of these three factors results in an ever-present shortage not only of ICT workers, but also of ICT skills in general. It is estimated that this shortage ranges from 40 to 50 thousand employees. Skills shortages in the ICT sector are related not only to technical skills, but primarily to social skills, which enable effective teamwork and development of project management skills.

During the period 2007-2013 the projects aimed at minimising skills shortages were mainly financed within the framework of the Human Capital Operational Programme (HC OP). While changes made in the core curricula and educational standards under the HC OP in formal education are generally assessed positively, training programmes financed within the programme are rated rather low, and there is no evidence of their effectiveness in raising ICT skills in a satisfactory manner. Currently, education and training in the ICT sector can be financed under the Knowledge, Education and Development Operational Programme (PO WER), but the funds are much smaller than in the previous programme. In the current perspective, most of the funds spent directly on vocational education and professional training are available under regional programmes (16 programmes, one for each voivodeship). However, these funds are expected to support ICT skills in a broader sense (e.g. within society as a whole) and not the education of ICT specialists. Other initiatives which indirectly translate into the reduction of shortages in the ICT sector include: Intelligent Development Operational Programme, from which ICT innovations are financed, Digital Poland Operational Programme, which aims to increase public access to broadband Internet and the introduction and improvement of e-administration, and Eastern Poland Operational Programme which supports start-ups and augmenting of business processes – such as implementation of CRM or ERP systems. In 2015 a Sectoral Qualification Framework for ICT was developed, while in 2016 the appointment of an ICT Sectoral Skills Council is planned. The goal of this council will mainly be the constant monitoring of the labour market in terms of skills shortages and surpluses and resulting recommendations in the field of education and training, to eliminate the problems identified. However, these measures will be effective only on condition that the Council’s recommendation will be implemented by the government, particularly in terms of educational programmes and faculties.

Healthcare specialists

There are about 650 thousand employees in the health sector in Poland. For several years, a shortage of doctors, nurses and midwives (in relation to existing needs) has been a characteristic feature of the Polish healthcare sector. This is mainly due to two factors: emigration of medical personnel, in particular
Polish healthcare sector. This is mainly due to two factors: emigration of medical personnel, in particular specialist doctors, nurses as well as midwives; and strong competition generated by the private healthcare sector, which attracts mainly specialists. According to various estimates, Poland lacks up to 25 thousand specialist doctors and the shortage of medical specialists constantly deepens. Skills shortages relate to steps taken by the Ministry of Health to counteract the insufficient number of healthcare specialists. For example, in order to speed up the learning process the post-graduate medical practice, as well as nurses’ and midwives’ training in secondary medical schools, were removed from the curricula. These measures resulted in a significantly reduced number of hours of practical training, which has contributed to skills shortages. In the case of medical studies, the Ministry of Health prescribes enrolment limits for individual universities. For example, in the 2013/2014 academic year medical universities could enrol only around three thousand students on doctor programmes. The enrolment limits are due to limited funding for the training of doctors. Furthermore, the enrolment limits for medical specialisations are not effectively territorially distributed e.g. they are not aligned with the needs of the regional economy. Healthcare specialists in the public sector often have more than one job (due to insufficient wages) and therefore do not have enough time for training and further professional development.

At the moment, the Ministry of Health carries out activities aimed at eliminating skills shortages under the Knowledge, Education and Development Operational Programme (PO WER). The programme provides measures in the field of training of health personnel and the implementation of development programmes for medical schools, especially in the area of practical skills for students of medical sciences. So far, no effective method of addressing unfavourable conditions and shortages of skills in the healthcare sector has been developed. Some solutions attempted proved ineffective and, in some cases, even counter-effective, which contributed only to the deepening of skills shortages. Currently, the search for effective methods to reverse the negative trend has started. One such proposal is to restore the old postgraduate practice and radically increase admissions limits at medical universities. In the current situation, it seems that the only effective means of reversing the current unfavourable trend is to change the method of financing public healthcare. These changes should be focused on the quality of medical procedures, professional training of medical personnel and amending the rules on remuneration. Some of these proposals are currently under review by the Ministry of Health. The introduction of proposed changes will require a significant increase in total spending on healthcare, from the current approx. 6.5% of GDP to at least 8-9% of GDP, which however may prove impossible.

Managers

Managers in Poland comprise nearly one million workers, including: chief executives, senior officials and legislators, administrative and commercial managers, production managers and specialised services, retail and other services managers. Due to the specific structure of companies in Poland, where nearly 99% of companies are small businesses (employing less than 50 employees), demand for managers is high (and increasing) and makes this occupational group highly diverse. In Poland there is no uniform system of education of managers. Educational programmes in the field of management skills are offered both by universities and vocational schools as well as training companies. While training companies and vocational schools mostly offer specialised courses that focus on specific fields of managerial activities, management-related higher education programmes are usually general in order to
attract higher numbers of admissions. In the field of management, universities teach up to 60 thousand graduates annually. The actual scale of managers’ skills shortage is very difficult to estimate. According to available studies, managers usually lack skills such as: assessing own strengths and weaknesses; risk assessment; creativity; ability to change opinions; listening to others and drawing conclusions; and professional skills related to a given sector. Deficiencies of such important managerial skills might hinder the growth of Polish companies.

Despite the recognised problem of managers’ low skills, no special programmes aimed at improving management skills have yet been put in place. Some elements of these activities were present almost exclusively within the field of education and public administration, where a number of measures under the Human Capital Operational Programme, Knowledge, Education and Development Operational Programme and Eastern Poland Programme have been allocated to improve managerial skills. These measures include: postgraduate studies; study visits; and professional courses. However, taking into account the structure of the Polish economy (prevalence of SMEs), the manager is often the enterprise owner – in which case there is no strategic programme for the improvement of owners’ management skills. A potential solution to the problem could be “The Register of Developmental Services”. This is a national database of job trainings, vocational courses, counselling, post-graduate studies, mentoring or coaching programmes. The Register provides users (mostly companies) with universal access to information on educational services providers and their offerings thus providing a possibility to order a “tailor-made educational service”. The problem of skills shortage among managers may be solved only by adopting systemic solutions including:

a. support for selected top business-oriented universities;

b. creating a specialised training programme designed for middle and operational level managers of small and micro-companies focused on social competence and leadership; and

c. promoting education and professional training of managers among small businesses in particular.

Science and engineering professionals

This group is very diverse including more than 400 thousand employees from all technical areas (electronic engineers, building engineers, etc.). Problems of filling job vacancies are persistent for engineers, with the highest demand related to the optimisation of manufacturing processes. In this area, skills shortages result from three factors. The first is the low quality of education. According to managers, one of the main reasons for the difficulties in finding candidates for engineering positions is the lack of technical skills, which concerns more than 50% of the candidates. The second factor is the mismatch between education and the needs of employers located in a given region. In this case, the main reason for the problem is the lack of coordination between universities and labour market institutions in preparing the educational offer. And the third reason is emigration, especially in the case of young people whereby young engineers usually decide to leave permanently and settle in another country. As noted by some studies, on one hand the problem of shortage of formal qualifications of engineers might be mainly attributed to a demographic gap. On the other hand, skills shortages relate to the fact that the majority of engineers do not have the necessary skills.

Counteracting shortages of engineers is one of the priorities of the government. Until 2014, this priority
was carried out through so-called “Ordered Programmes” and aimed at increasing young people’s interest in studying science and engineering. This programme was assessed as moderately effective, as only approx. 50% of graduates of ordered programmes took up employment in occupations consistent with qualifications gained during their studies. In 2014, the “Ordered Programmes” were replaced by a “Skills Development Programme”, comprising measures targeting skills of groups in education. This programme provides for the strengthening of entrepreneurship education, professional competence, interpersonal and analytical skills. The Ministry of Science and Higher Education orders and finances training of selected competencies in all fields of study within the programme. The programme focuses on workshops, use of new technologies in higher education and the promotion of modular education and interdisciplinary studies. These activities are financed under the Knowledge, Education and Development Operational Programme (POWER). On the other hand, measures targeting skills of existing employees are mainly limited to the Registry of Developmental Services, and the National Training Fund. Existing programmes aimed at eliminating shortages of engineers have not proved effective against the problem of emigration. Within the programme of voluntary return and reintegration, an information portal has been introduced for people planning to return to the country. Another measure relates to the implementation of temporary residence permits for foreigners allowing them to work in highly qualified jobs. There is no systematic solution designed to reverse the current trend in this regard, for example by pursuing a specific immigration policy.

**Skilled manual workers**

In Poland, filling vacancies for skilled manual workers has been a problem for many years. Welders, fitters, turners, seamstresses, forklift operators, mechanics and electricians are the most demanded workers. This group includes a total of over two million employees. Skills shortages in this group are due mainly to two factors:

- **a. lack of well-developed system of professional training** (training of skilled workers is carried out within the system of vocational education and the system of crafts and training provided by public employment services); and
- **b. emigration**, particularly of young people and highly skilled workers.

A very low proportion of adults participate in lifelong learning in Poland. It is estimated that in 2015 only 4% of economically active adults took part in educational activities. Over the last few years, this proportion has decreased (it was approx. 5% in 2010). This problem has not yet been solved and actions taken have proven to be ineffective. The problem of emigration of young people is particularly evident in the case of skilled workers. It is estimated that wage growth in this sector and the difficulties in finding suitably qualified candidates are largely the result of emigration. The scale of permanent emigration is difficult to estimate, but in contrast to engineers, most skilled workers work abroad temporarily.

A number of measures aimed at improving professional skills and increasing participation in lifelong learning have been implemented, particularly among young people with a lower level of education and disadvantaged in the labour market. Training projects implemented under the Human Capital Operational Programme (HC OP) or Knowledge, Education and Development Operational Programme (POWER),
the Eastern Poland Operational Programme\textsuperscript{[41]} and regional programmes are directed to these groups. The lack of growth of participation of Poles in lifelong learning and the persisting difficulties in filling vacancies suggest that so far the effectiveness of these activities has been limited\textsuperscript{[42]}. The activities carried out by Public Employment Services mainly comprise measures targeting the labour reserves and skills of existing employees.\textsuperscript{[43]} However, their effectiveness is rather low\textsuperscript{[44]} but slowly improving in recent years\textsuperscript{[45]}. In the coming years, the effectiveness of interventions could be improved primarily with further strengthening of the role of quality criteria in choosing the best training offers\textsuperscript{[46]} and by moving away from the practice of specifying training subjects “top-down”\textsuperscript{[47]}. There are also measures related to labour migration\textsuperscript{[48]}. As a general rule third country nationals need a work permit to access the Polish labour market, but there are many exemptions from this requirement. The most popular is a so-called simplified procedure allowing citizens of 6 countries (Ukraine, Belarus, Armenia, Georgia, Moldova, and Russia) to perform short-term work on condition that the employer submits a declaration to the local labour office\textsuperscript{[49]}. It is estimated that in 2014 roughly 250 thousand foreigners worked in Poland based on this regulation. Another measure is the so-called “Card of the Pole” issued to persons of Polish nationality possessing also the nationality of one of the countries of the former Soviet Union. “Card of the Pole” entitles one to take up employment in Poland without a work permit.\textsuperscript{[50]} The measures described here are focused on meeting the ad hoc needs of employers.

**Teaching professionals**\textsuperscript{[51]}

This includes two groups of occupations that together account for nearly 800 thousand employees: school teachers; and coaches and trainers. Each group is discussed separately. In the case of school teachers, skills shortages are very difficult to identify. This is due to the accepted model of teachers' promotion, which is formalised and fully controlled by the Ministry of Education\textsuperscript{[52]}. Education of future teachers takes place at universities whereby every year more than 30 thousand graduates from pedagogics leave HEIs\textsuperscript{[53]}, often without the analysis of the necessary needs. Achieving further degrees of professional promotion requires an internship completed with a positive assessment of the teacher's professional achievements or examination. The result of this model of teachers' promotion is to focus on formal promotion and qualifications, while minimising the assessment of professional skills and competencies. It is also notable that the promotion of teachers is not linked with the educational outcomes of their pupils.\textsuperscript{[54]} For this reason, despite having very high formal qualifications, the level of professional skills of school teachers might be, in fact, lower than officially declared. The second group of teaching professionals are coaches and trainers. Occurrences of skills shortages in this group can be determined only indirectly. For example, it is estimated that the vocational training of the unemployed conducted by Public Employment Services has employment effectiveness as low as 20%.\textsuperscript{[55]} A variety of factors influence the situation, including the lack of or low correspondence between training and local labour market needs, and low competences of trainers providing vocational training to the unemployed. It should be noted that the low efficiency of training is essentially attributed to training financed by public funds. In the process of selection and training, public institutions are required to apply tendering procedures with the lowest price as a decisive criterion, which usually translates into low quality of training\textsuperscript{[56]}. In the case of commercial training (e.g. courses purchased by companies) this problem does not occur.
Among the projects carried out under the Human Capital Operational Programme it is worth mentioning the "system for training teachers based on complex support of schools". Within this project, a web-based platform which supports modern forms of teacher training has been established. The platform is aimed at employees, teacher education institutions, and psychological, educational and pedagogical libraries. Similar activities will be continued under the Knowledge, Education and Development Operational Programme. The effectiveness of general teacher training, however, is relatively poor. This is due to several factors: lack of real recognition of the needs for teacher training; low number of activities related to the training of teachers; and the lack of connection between salaries, career advancement of teachers, and education outcomes of students. In the case of coaches and trainers the situation is different. In this area, there is rather a limited public support. In practice, professional improvement in this group can be realised only outside the formal system. Some organised activities in the area of trainers and coaches are carried out by professional organisations, such as the Polish Association of Mentoring, the Polish Chamber of Training Companies or the Polish Association of Business Trainers.

Other shortage occupations

Legal, social and cultural professionals - in this group, skills shortages mainly concern lawyers. After passing state examinations, most graduates do not take work in law firms, but start working as legal advisors, specialists of public procurement, etc., primarily in public administration. Truck drivers - shortage in this group is identified by the Barometer of Occupations study and has been reported by social partners for some time.

Surplus Occupations

Surpluses have been identified for the following occupations: handicraft and printing workers; market-oriented skilled forestry, fishery and hunting workers; food processing; wood working; garment and other craft and trade related workers; legal, social, cultural and related associate professionals. Other possible surplus occupations may include: miners; and business and administration specialists. Reasons for surpluses relate to significant declines in the labour force in traditional sectors such as handicraft and printing, forestry and fishery or garment production. Other reason for surpluses is the oversupply of students in fields related to economics, law, social science etc. Surpluses can be explained also by increasing skills requirements e.g. due to technical progress and the resulting changes in work processes. For example, in the case of printers, new printing technologies have been introduced which caused significant a decrease in the labour force related to new skills requirements e.g. knowledge of operating electronically controlled systems.

The problem of surpluses can be solved using several measures. One example is the introduction of an integrated qualification system, under which sectoral councils are going to be established. These councils will constantly monitor skills shortages and surpluses in the labour market and consequently recommend activities in the field of education and training. A second measure is The Register of Developmental Services, which enables one to easily review available education and training programmes. Finally, the acquisition of new skills demanded in the labour market is one of the objectives...
of the training activities undertaken by the Public Employment Service. Although the activities are numerous, their efficiency is diminished because they are carried out independently of each other, without essential coordination. In addition, the lack of widespread monitoring of skills shortages and surpluses at a sufficiently detailed level makes it very difficult to design effective activities in this area.

**Note on the methodology**

The list has been compiled by Cedefop in the first half of 2016 combining quantitative and qualitative methods. In particular, a list of mismatch occupations was formulated following quantitative analysis of labour market indicators. Country experts were then asked to build on and scrutinise this list. Their expert assessment and knowledge of the country’s labour market has provided rich insights about the reasons behind the skills shortages or surpluses at occupational level. These are also accompanied by measures and policies that aim to tackle such mismatches. Country’s stakeholders have also been included in validating the final list of occupations.

Find here more data and information about Poland.

**References**

[1] ISCO 08 groups: 25 Information and communications technology professionals and 35 Information and communications technicians


[9] Although while the PO WER funds at the central level for increasing ICT skills are substantially lower,
Although while the POWER funds at the central level for increasing ICT skills are substantially lower, when summed up with the Regional Operational programmes, they provide a significant source of financing.

[10] Voivodeship (województwo) is an administrative name of the NUTS 2 level region in Poland.


[12] The process of establishing Sectoral Skills Council was initiated only recently. According to the official document, government (the relevant minister for the ICT sector) should take into account the council’s recommendations, but is not obliged to do so.

[13] ISCO 08 groups: 22 Health professionals and 32 Health associate professionals


[19] The admission quotas are set on the basis of the number of academic teachers, the number of places for the practice, the budget of the Ministry of Health (the Ministry of Health finances all medical universities) and the number of vacancies in hospitals and other medical facilities.


[21] ISCO 08 groups: 11 Chief executives, senior officials and legislators, 12 Administrative and commercial managers, 13 Production and specialised services managers and 14 Hospitality, retail and other services managers


However, it is worth noting that while the Register aims to collect information on the possibilities of increasing skills (and thus increases training accessibility) it does not provide public financing.

ISCO 08 group: 21 Science and engineering professionals


Kompetencje Polaków a potrzeby polskiej gospodarki. http://www.uj.edu.pl/documents/102715934/ee4045d5-357a-4ab7-a8f7-f408761184f4


The National Training Fund (Krajowy Fundusz Szkoleniowy) was introduced with the amendment to the Act on employment promotion and labour market institutions in May 2014. It includes a part of the Labour Fund (2% of the Fund), aimed at supporting the lifelong learning of employees and employers. From the Fund, the employer can finance the costs incurred for: (1) identification of training needs in the company; (2) courses and post-graduate studies carried out on the initiative of the employer or with his consent; (3) exams; (4) medical and psychological examination necessary to undertake training or work after training; and (5) accidents insurance in connection with the training undertaken. A small part of KFS (approx. 1%) remains at the disposal of the Minister of Labour and Social Policy and the local labour offices - for the analysis of demand for occupations, promotion of the Fund, studies of the effectiveness of support and consultations for employers.


ISCO 08 group: 7 Craft and related trades workers

The reasons for this might be the construction of these measures, which are not primarily focused to increase the ‘voluntary’ participation in LLL of individuals (for whom only foreign languages and ICT courses but no vocational training was offered) as well as limited participation in apprenticeships/traineeships in Poland.

According to the data of the Ministry of Family, Labour and Social Policy, the effectiveness of both individual and group training increased to, accordingly, 53% and 51% in 2014, from 40% and 39% in 2012 (as measured with employment effectiveness during training or after 3 months).

Since 2014, on the basis of the Regulation of the Minister of Labour and Social Policy of 14 May 2014 on the detailed conditions of implementation and procedures of labour market services (Journal of Laws of 2014, Item 667) in the selection of training institutions, which will be commissioned for conducting training, the district labour office is obliged to take into account at least five of the following criteria: (1) adjustment of the training programme to the identified labour market needs; (2) quality of the programme, including the use of professional qualification standards and modular vocational training programmes; (3) experience of the training institution in the implementation of training in the area of training; (4) certificates of training quality held by the training institution; (5) adjustment of the qualifications and experience of the trainers in the scope of the training; (6) adjustment of teaching equipment and facilities to the needs of training; (7) type of documents confirming completion of the training and qualifications; (8) training costs; (9) organisation of the practical classes defined in the training programme; and (10) undertaking analysis of efficiency and effectiveness of the training. Therefore, according to the Ministry of Family, Labour and Social Policy, for the last three years local labour offices mandatorily apply quality criteria in selecting training for the unemployed and jobseekers.
Subjects for training offered by the Public Employment Service are specified on 2 tiers – the Minister of Labour sets general subject for a given year, and on this basis the Voivodeship Labour Offices set specific programmes for the whole Voivodeship. Local labour offices are obliged to offer only the courses that are included in this list.

According to the Ministry of Family, Labour and Social Policy, available statistics both on simplified procedure and work permits indicate the growing share of skilled manual workers within the total. Among them there are: welders and related workers; concrete finishers; plasterers; heavy truck drivers; assemblers; machine operators; metal, machinery and related trades workers; floor layers and tile setters.

Rozporządzenie Ministra Pracy i Polityki Społecznej w sprawie przypadków, w których powierzenie wykonywania pracy cudzoziemcowi na terytorium Rzeczypospolitej Polskiej jest dopuszczalne bez konieczności uzyskania zezwolenia na pracę z dnia 21 kwietnia 2015 r. (Dz. U. z 2015 r. poz. 588)


ISCO 08 group: 23 Teaching professionals


There are however, interesting examples of the Public Employment Services initiatives focusing on the quality of training offers, like Małopolska Standards of Educational and Training Services (Małopolskie Standardy Usług Edukacyjno-Szkoleniowych), that promote quality-based procurement procedures. (see: https://www.pociagdokariery.pl/Lists/WUPArticles/Attachments/701/Przewodnik%20-%20MSUES.pdf#)

Platforma Doskonaleniewsieci.pl. http://www.ore.edu.pl/projekty-ue/projekty-systemowe/wspieranie-szkol-i-nauczycieli/112-wspieranie-szko-i-nauczycieli-aktualnoci/6667-platforma-doskonaleniewsieci-pl Programmes implemented revealed some interesting positive effects. For example, as the result of the project, thanks to the web-based platform, teachers started to prepare their own courses based on information shared by their more experienced colleagues.
Some major public investment in business trainers’s skills has been made on the basis of the ESF funded project, undertaken by the Polish Agency of Enterprise Development under HC OP under the previous financing regulations. Even though that the evaluation of the project was positive ([Trenerzy biznesu, Badanie PARP 2014: http://www.archiwum.ewaluacja.gov.pl/Wyniki/Documents/6_291.pdf](http://www.archiwum.ewaluacja.gov.pl/Wyniki/Documents/6_291.pdf)), this was a one-off action, that did not translate into systemic solutions in the professionalisation of business trainers.

[61] [TWORZYMY WARUNKI I RYNEK PRACY, DLA PROFESJONALNYCH MENTORÓW. http://mentoring.org.pl/](http://mentoring.org.pl/)


[63] [Polskie Stowarzyszenie Trenerów Biznesu. http://pstb.pl](http://pstb.pl)

[64] ISCO 08 groups: 73 Handicraft and printing workers, 62 Market-oriented skilled forestry, fishery and hunting workers, 75 Food processing, wood working, garment and other craft and related trades workers and 34 Legal, social, cultural and related associate professionals

[65] Even though that Public Employment Services undertake studies (such as the monitoring of deficit and surplus occupations and a new study – Barometer of Occupations) according to a uniform methodology across Poland, this focuses mainly on the occupations and specialisations level (and not skills level).