The Netherlands: Mismatch priority occupations

Science and engineering professionals belong to high shortage occupations for the Netherlands. Looking at past, current and future trends (3-4 years), a number of occupations have been identified as mismatch priority occupations for the Netherlands, i.e. they are either in shortage or 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.

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**Summary**

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Looking at past, current and future trends (3-4 years), a number of occupations have been identified as mismatch priority occupations for the Netherlands, i.e. they are either in shortage or 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 the Netherlands. The occupations presented are not given any rank. All of them present high mismatch.

**Mismatch priority occupations**

**Netherlands**

**Shortage occupations**

- Science and engineering professionals
- Architects, planners, surveyors and designers
- Science technicians
- ICT professionals
- Installers and repairers
- Teachers

**Surplus occupations**

- Personal care workers in health services
- Nursing and midwifery and other health professionals
- Legal, social and religious professionals
- Child-care workers and teachers’ aides
- Secretaries and keyboard operators

**Shortage Occupations** [1]

**Science and engineering professionals** [2]

Although the technical sector as a whole faces a loose labour market (with sufficient supply and limited expected growth until 2020), exceptions can currently be observed and expected for specific technical occupations. For example, the number of job openings exceeds the number of entrants into both occupations: ‘engineering professionals’ and ‘electro technology engineers’. People in these occupations (as of 2014) mostly work full time and more hours per week in comparison to other occupations. In particular, engineering professionals (excluding electro technology) represent a minor occupation group.
particular, engineering professionals (excluding electro technology) represent a minor occupation group, which has shown strong growth in the past two decades. Until 2020, employment for this occupation group is expected to further increase with growth of 2.8% per year. The share of job openings \(^3\) in 2014 was high (4.2% per year) in comparison to the average for the entire Dutch labour market (3.7% per year). The expected shortages are mostly due to a low expected inflow of graduates relative to the increasing demand. For example, in 2014, only 20% of electro technology engineers had a diploma in the field of technology. The shortages may be due in part to a significant number of secondary school graduates not choosing vocational education in the technical field. Although the share of pupils in general secondary education (havo/vwo \(^4\)) opting for natural sciences and mathematics increased from 39% in 2004/2005 to 51% in 2014/2015 \(^5\), this development has not occurred yet within vocational education. Moreover, there is a substantial loss of supply at the time of labour market entry from the graduates with a diploma in the field of technology, 53% had a technical profession, and 38% opted for a non-technical one. \(^6\)

Educational institutions, employers, employees, the so-called Top-Sectors \(^7\), and regional and central government have agreed on a national Technology Pact \(^8\). The Technology Pact was created in order to find ways to satisfy the need for (highly skilled) technologists on the Dutch labour market. They are needed at all levels because businesses in promising industries, such as energy, horticulture, chemicals, life sciences and health, have thousands of challenging jobs for hands-on vocational graduates as well as for academic graduates and researchers. A shortage of engineers could have a strong negative impact on the whole economy. The Technology Pact foresees three lines of action (to be undertaken in the years to 2020). The first has the objective to increase the number of pupils choosing to study in the field of technology. The second is aimed at increasing the number of pupils and students with a technical qualification progressing to a job in technology. The third aims to improve the retention of technology workers in the technology sector and find alternative jobs in technology for people with a background in technology who are at risk to lose their jobs or have been marginalised. The share of women in this occupational group is relatively low (4% for electro technology engineers). Measures aimed at increasing and retaining the supply of workers within this field should have a special emphasis on females, such as, the Femme Tech Day (a one-day annual event that brings together women from all over the Netherlands with a passion for technology).

Architects, planners, surveyors and designers \(^9\)

The most recent economic crisis had a particularly adverse impact on the construction sector. Consequently, the architecture sector has shrunk since 2008, with a decline in revenue (60%) and the number of working architects halved. Dozens of reputable agencies went bankrupt. It is expected that due to the recovery of the housing market that started in 2015, the architectural services sector will also recover. This will contribute to growth in job openings, where the limited supply of (future) graduates will not be sufficient. Limited supply of graduates and growing demand for architects, planners, surveyors and designers is expected to cause a shortage of qualified staff in these occupations during 2015-2020. High replacement demand also contributes to shortages. In the years to 2020, employment growth of 7% and replacement demand of 16% are expected for architects. This will lead to a predicted increase in job openings of 24%. However, the number of (future) graduates is not expected to increase sufficiently to meet this demand.
The Technology Pact addresses the broad field of technology, which also covers studies in architecture.

**Science technicians** [10]

In 2014, this occupation contained 86.2 thousand employees. In the years to 2020, demand for science technicians is expected to grow: employment growth of 7%; and replacement demand of 13%. This leads to an expected increase in job openings of 19%. However, the supply of graduates in the field of science technicians will not be sufficient to cover the growing demand. The number of students registered for an intermediate vocational education in the field of technical science decreased by around 9% between 2010 and 2015, from 52.8 thousand in 2010 to a little more than 48 thousand in 2015 [11]. If a similar pattern continues in the period from 2015 to 2020, the supply of future graduates will be rather limited. The share of part-timers is relatively low (20% in 2014), as is the share of women working in these professions (16%). The low incidence of part-time employment in this profession implies that it is hard to increase supply by stimulating part-timers to work more hours.

The Technology Pact covers also studies for science technicians. In addition, an action plan to reduce youth unemployment was launched in 2013 by the Ministry of Education, Culture and Science and the Ministry of Social Affairs. A part of this plan is the school ex-program 2.0, which includes meetings between counsellors and students applying for their intermediate vocational education. These meetings are aimed at encouraging young individuals to choose an educational programme with good job opportunities. A first evaluation of the programme raised concerns about the success of the meetings. This is mostly due to the lack of programmes which match the interests of the students (or their previous education) and offer, at the same time, better job opportunities. As a result, counsellors have to motivate students to switch to a completely different field, which is possibly not in their field of interest. Counsellors also noted that the young applicants do not consider job opportunities after graduation to be an important aspect of choice. [12]

**ICT professionals** [13]

The labour market for computer science professions is currently very tight. ICT jobs are especially hard to fill at higher education level. This primarily concerns developers/programmers in specific programming languages, security specialists and business analysts. At the same time, the number of requests for unemployment benefits from people working in computing professions increased. There is a relatively large supply of ICT professionals with secondary vocational education and those with generic ICT training. However, there is demand for higher education specialists with specific ICT-knowledge. This is especially true for two specific occupation groups: software and application developers and analysts, as well as information and communication technology service managers. The main reason for skills shortage is that the expected inflow of graduates is too low to meet the demand of the labour market. The share of job openings will be relatively high (2.5% per year until 2020), mainly as a result of expected employment growth (1.5% per year until 2020) within this subsector. The forecast replacement demand is by contrast low, which is related to a small share of elderly workers in these professions (21%). The number of hours worked per week is high and the share of women in these occupations is low (11%). A very high replacement demand (5% per year until 2020) for ICT service managers, combined with a positive expansion demand will result in large number of job openings for this small occupation.
With a positive expansion demand will result in a large number of job openings for this small occupation group (26 thousand in 2014) in the years to 2020. These job openings will most probably not be filled by young graduates, given the fact that the share of young (15-29) workers in this occupation group is very low (4%).

There are no specific measures to alleviate the shortage of ICT specialists, except for the actions of sector organisations to try to raise young people’s awareness of job opportunities in ICT occupations. The ICT sector is characterised by skills needs that change very rapidly; therefore, it is challenging to adapt the supply to these rapidly changing skill needs. A possible solution to ICT-shortages could be found in the (over-) supply of people with general ICT-training. Solutions may include education and training for these job seekers with a general ICT background. This requires collaboration between the industry and the Dutch employment agency (UWV) and/or other employment agencies.

**Installers and repairers** [14]

Installers and repairers have been shrinking as an occupation group with 74 thousand workers in 2014, compared to 96 thousand in 1996. Over the same period, there was a continuous increase in the education level of the working population due to increasing employer demands. In addition, technological changes and the diffusion of computers are expected to substitute low-skilled professions while complementing the high-skilled ones. As a result, certain professions may gradually disappear. Despite the contraction of this occupational group, installers and repairers remain a group with expected shortages, mostly due to a high expected replacement demand in the years to 2020 (4.2%). The high replacement demand is due in part to the retirement of baby boomers; in 2015, 11% of installers and repairers were over 55 years old, and another 20% were between 45 and 55 years old. The retirement of these employees will require replacement. On the supply side, the inflow of graduates from intermediate vocational education does not satisfy the expected demand e.g. approx. 1% of the total intermediate vocational education participants study to be an installer or repairer.

In several ways, educational institutions, firms and the Dutch government aim to encourage pupils to choose education programmes with good prospects (like installers and repairers) and discourage them to opt for educational programmes that offer fewer opportunities on the labour market. The school ex-program 2.0 applies also to installers and repairers. The Ministry of Education has recently imposed a responsibility to vocational educational training institutions concerning the labour market prospects of their graduates. One concrete instrument is the obligation of educational institutes to provide their (prospective) students with accurate labour market information. Another instrument refers to occupational orientation, which covers labour market prospects. There is lack of evidence about the effectiveness of these instruments. In some regions (e.g. de Zaanstreek) there is intensive cooperation between vocational training institutes and companies in order to improve the link between education and the labour market.

**Teachers** [18]

Various teachers (secondary education teachers, primary school and early childhood teachers & other teaching professionals) are in demand. The replacement and expansion demand is not higher than average, but the inflow from teacher training programmes (until 2020) is expected to be insufficient.
The applicants for primary school and early childhood teachers have been decreasing since 2005. The relatively low participation in teacher programmes may be due to different factors, including wage and status of the profession. The education sector is highly dependent on the situation of the ‘regular’ labour market. Wages in the education sector are less flexible than in market-related activities. When shortages arise, it is more difficult for the education sector to improve working conditions (wages) in order to attract additional teachers. Another possible explanation is the increase in unemployment rates for recent graduates of teacher programmes. In the cohort that graduated in 2008/2009, 4% were unemployed a year after graduation, and this increased to approx. 11% for the cohort that graduated in 2011/2012. Another explanation of the shortfall in the inflow of young people into teacher programmes is the recent introduction of minimum requirements for language and computing skills.

In close cooperation with teachers, principals, school boards and educators, the teacher programme was developed. Its main aim is to maximise the supply of teachers. In order to achieve that, new groups must be attracted to the profession, and the quality of teacher training programmes must increase. Seven goals aimed at improving the quality of graduates and strengthening the labour market position of teachers have been set. One policy aspect of this programme is to select students on their suitability for the profession, leading to a reduced risk of dropping out. The HAN University of Applied Sciences, for example, is currently using an entrance test for their second degree English training programme that pays attention to the knowledge and motivation of the students. In addition, the extension of part time contracts in education could be a (partial) solution.

Other shortage occupations

The Dutch social security agency (UWV) assessed labour market tensions for 127 occupational groups, by calculating the number of vacancies and short time unemployed people (jobseekers that are unemployed for six months or shorter). Occupations with large shortages for 2015 were identified as: ‘clerical support workers’, ‘craft and related trades workers’, ‘plant and machine operators, and assemblers’, ‘skilled agricultural, forestry and fishery workers’.

Surplus Occupations

Surpluses are expected for personal care workers in health services, nursing and midwifery and other health professionals, legal, social and religious professionals, child care workers and teachers’ aides, secretaries and keyboard operators. Although the healthcare and welfare sector had a tremendous increase in job openings between 2008 and 2012, it is expected that this sector will have severe surpluses in the future. The sector is expected to see modest growth in employment, of 0.2% per year for the healthcare sector and 0.3% for the welfare sector. This, combined with an increasing contribution of individuals for their healthcare, pressure on budgets from insurance companies and budget cuts in healthcare from the government, will cause a decrease in job opportunities in the coming years. Despite this, the inflow of graduates from health programmes will stay high. Therefore, the supply of graduates in this field will outnumber the demand, causing a surplus for personal care workers in health services, nurses, midwives and other health professionals. Child care workers and teachers’ aides are also expected to have surpluses. For child care workers, one explanation relates to the budget cuts by the government. Most welfare organisations are dependent on the government as contractor and investor,
and smaller budgets lead to fewer job openings. In addition, budget cuts from the government also impact on the financial support parents receive for day care, which causes parents to work less or let family members, instead of professionals, take care of their children[24]. Another issue is the demand for employers in this field with higher educational backgrounds. A greater emphasis is being put on the safety, physical health and pedagogic development of children. For both child care workers and teachers’ aides, there is less demand for employees on secondary vocational education and more demand for employees with higher educational levels. [25] Employment growth is almost absent for legal, social and religious professionals. Because of the relatively high share of young people (15-29: 21%) and relatively low proportion of elder workers (20-64: 24%), replacement demand is expected to be low in the period 2015 to 2020. In combination, these factors lead to very few job openings. In the coming years, the spread of automation and digitisation will lead to declining employment for secretaries and keyboard operators. Many routine human actions such as (financial) administration will be replaced by programmed systems and computer programs, or may be performed by customers themselves. Administrative work is shifting from data processing to data verification. As a consequence, most of the tasks (previously) carried out by those with lower-level skills will become redundant. Jobs at a higher level will become more important, which is already reflected by recent trends in vacancies for (financial) administrative jobs. Also, outsourcing and centralisation of administrative or secretarial work contribute to efficiency gains and consequently to job losses. The impact of these trends is relatively smaller for secretaries than for other administrative professions.

Other surplus occupations

UWV assessed labour market tensions for groups of occupations by calculating the number of vacancies and short time unemployed people (jobseekers that are unemployed for six months or shorter). Occupations with large surpluses in 2015 were: ‘veterinarians’, ‘legislators and senior officials’, ‘database and network professionals’, ‘nursing and midwifery associate professionals’ and ‘legal professionals’.

The surpluses in healthcare and welfare occupations mainly result from policy decisions, namely significant cuts in budgets. It is important to note that the extent to which the surpluses will manifest themselves depends on the extent to which these cuts will actually be implemented. In addition, estimates for growth in the healthcare and welfare sector are positive towards the end of the forecast period (2018-2020), which could indicate a recovery of employment prospects in the sector. One element of the government plan to reduce youth unemployment is the school ex-program 2.0 which includes planned meetings with scholars applying for their intermediate vocational education. These meetings are aimed at encouraging young individuals to choose an education with good job opportunities. They also try to encourage graduates of secondary vocational education to continue to study at a higher educational level, thus reducing the number of graduates with lower educational levels for whom demand is decreasing (child care workers, teachers’ aides, secretaries and keyboard operators).[26]

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 the Netherlands.

References

[1] Figures on demand and supply are derived from ROA’s ‘labour market information system (AIS)’, which is based on the Labour Force Survey.

[2] Engineering professionals (excluding electrotechnology) (ISCO 214); Electrotechnology engineers (ISCO 215).

[3] The share of job openings relative to the amount of people working in this occupation group.


[7] These are 9 industry sectors in which the Netherlands wants to excel (topsectoren). http://topsectoren.nl/


[9] Architects, planners, surveyors and designers (ISCO 216)

[10] Physical and engineering science technicians (ISCO 311); Life science technicians and related associate professionals (ISCO 314)


[12] ROA report: Evaluatie van het School-Ex 2.0 programma: De rol van studiekeuze- en exitgesprekken in het MBO

[13] Software and applications developers and analysts (ISCO 251); Information and communications technology service managers (ISCO 133)
technology service managers (ISCO 133)

1. Link to report on Dutch IT labour market [in Dutch]

[14] Electrical equipment installers and repairers (ISCO 741)

[15] CBS statline, werkzame beroepsbevolking naar beroep

[16] Zorgplicht arbeidsmarktperspectief bij mbo-instellingen


[18] Secondary education teachers (ISCO 233); Primary school and early childhood teachers (ISCO 234)

   http://www.talisconference.nl/upload/files/Teachers%20program.pdf

[20] ISCO 4

[21] ISCO 7

[22] ISCO 8

[23] ISCO 6


[26] ROA report: Evaluatie van het School-Ex 2.0 programma: De rol van studiekeuze- en exitgesprekken in
   het MBO

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