

OECD Skills Studies

OECD Skills Strategy Luxembourg

ASSESSMENT AND RECOMMENDATIONS

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Foreword

Developing relevant skills and using them effectively is crucial for Luxembourg's ability to thrive in an increasingly interconnected and rapidly changing world.

Digitalisation, globalisation, demographic change and climate change combined are increasing and transforming the skills needed to thrive in Luxembourgish workplaces and society. People will need a stronger and more well-rounded set of skills, including cognitive, social and emotional, and job-specific skills, to flourish in life both in and outside of work. The COVID-19 crisis has accelerated the digitalisation of learning and work, making upskilling and reskilling even more critical for many adults.

Luxembourg has achieved relatively strong skills performance in many areas. In terms of developing people's skills, the tertiary attainment level among young adults is among the highest across the OECD, and many adults continue to learn throughout adulthood. In terms of using people's skills, the unemployment rate is at a record low, and Luxembourg is providing jobs to a large number of foreign talents, many of whom are cross-border workers.

However, Luxembourg still faces a number of skills challenges. Skills imbalances are high, with prevalent skills shortages throughout Luxembourg's economy. Adult learning participation varies significantly across socio-economic groups, with those most in need participating the least. Foreign talent faces complex immigration procedures, high living costs and language barriers when seeking to work and live in Luxembourg. Finally, sufficiently timely and reliable data on current and future skills needs are missing.

Recent and planned policy reforms show great promise, but more needs to be done to ensure better skills outcomes. The government and all relevant stakeholders should continue to work in partnerships that involve every level of government, education and training providers, employers, trade unions, the non-profit sector and learners. Since Luxembourg is economically closely integrated in the Greater Region, which includes Luxembourg and the neighbouring regions of France (Lorraine), Germany (Saarland, Rhineland-Palatine) and Belgium (Wallonia), effective co-ordination in skills policies with actors in the Greater Region is essential.

While no single action is the answer, a clear vision and concrete steps taken together by all stakeholders can ensure that Luxembourg will bridge the skills gap. Citizens of all ages and backgrounds should be able to develop and use their skills effectively to take up the opportunities of a rapidly changing society.

To support Luxembourg in its reform agenda, the OECD has conducted a collaborative and tailored National Skills Strategy. It did this by providing detailed analysis and widespread engagement with stakeholders, leading to several tailored recommendations for Luxembourg, as outlined in the full report.

The OECD stands to support Luxembourg as it seeks to implement better skills policies for better lives.

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Executive summary

OECD-Luxembourg collaboration on the OECD Skills Strategy project

This OECD Skills Strategy Assessment and Recommendations project identifies priority areas for action for Luxembourg and provides tailored recommendations for improving its skills outcomes. The Skills Strategy has benefited from the insights of a wide range of government and stakeholder representatives through a background questionnaire, written input on the four priority areas, bilateral meetings, two workshops and site visits in Luxembourg. This process provided invaluable input that shaped the findings and recommendations in the full report.

Key findings and opportunities for improving Luxembourg's skills system

Megatrends such as digitalisation, globalisation, demographic change and climate change are transforming jobs and the way society functions and people interact. These megatrends have many repercussions in Luxembourg, including employers often struggling to find the skills they need and productivity becoming a more important driver of further economic growth. The COVID-19 crisis has accelerated the digitalisation of learning and work, disrupted the economy, and increased the risk of inequalities in education and labour markets in Luxembourg. In addition, the Russian Federation's (hereafter "Russia") war against Ukraine has led to high volatility in the stock market, contributing to a rise in inflation and wage pressures, further exacerbating prevalent skills shortages in Luxembourg's economy.

These megatrends and challenges reinforce the need for Luxembourg to design forward-looking and dynamic skills policies. To thrive in the world of tomorrow, people in Luxembourg need high-quality adult learning opportunities to develop a comprehensive set of skills and successfully manage transitions in the labour market. Moreover, given its relatively small domestic labour supply, Luxembourg needs to effectively attract and retain foreign talent from the Greater Region, the rest of the European Union and beyond. Luxembourg has already put in place a range of relevant strategies and initiatives: the Roadmap for the development of a National Talent Attraction, Development and Retention Strategy (2022); the Recovery and Resilience Plan of Luxembourg (2021); and the Digital Skills and Jobs Coalition (2017). Other strategies have a strong focus on skills as well. In the context of these ongoing initiatives, the country has a unique window of opportunity to put skills at the top of the agenda to positively influence the megatrends, tackle the challenges and seize the opportunities facing the country.

To support these efforts, the OECD and the Government of Luxembourg have identified four priority areas to further improve Luxembourg's skills system. These priorities and the key findings are summarised below.

Priority 1: Providing labour-market-relevant adult learning opportunities in Luxembourg

Building a strong adult learning system in Luxembourg requires all relevant actors to work more closely together, learn from each other and avoid unnecessary overlaps, contradictions and gaps in providing adult learning opportunities. These adult learning opportunities should be provided in a flexible and tailored

manner to ensure that all adults, regardless of their socio-economic background, can access them. Equally, adult learning opportunities need to be continuously reviewed and updated so that they respond to the evolving needs of the labour market and meet clearly defined quality standards. Luxembourg can strengthen providing labour-market-relevant adult learning opportunities by:

- improving the coherence and accessibility of adult learning opportunities
- increasing the relevance and ensuring the quality of adult learning opportunities.

Priority 2: Guiding and incentivising skills choices in Luxembourg

Career guidance services are growing in importance to help individuals successfully navigate and make informed skills choices in a constantly evolving labour market and throughout life. Guidance services need to be regularly updated, co-ordinated amongst diverse providers and customised to the needs of different individuals. Besides guidance, individuals also need personalised financial incentives to support greater participation in adult learning. Similarly, employers also need targeted financial incentives to provide adult learning opportunities. Luxembourg can strengthen guiding and incentivising skills choices by:

- improving guidance services for adult learning
- improving financial incentives for adult learning.

Priority 3: Attracting and retaining foreign talent to fill skills shortages in Luxembourg

The large number of foreign workers in Luxembourg's labour market suggests that Luxembourg is already an attractive destination for foreign talent. Many "pull factors" help Luxembourg attract foreign talent, including high quality of life, a safe living environment and attractive incomes. Nonetheless, there are opportunities to further improve Luxembourg's attractiveness to foreign talent, which should be seized to help Luxembourg remain competitive in the "global race for talent".

Retention of foreign talent will be as important as attraction to ensure that Luxembourg can benefit from the skills and talent it receives from abroad in the long term.

The country can strengthen its policies to attract and retain foreign talent to fill skills shortages by:

- facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs
- facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

Priority 4: Strengthening the governance of skills data in Luxembourg

Luxembourg collects a wide variety of quantitative and qualitative skills data (e.g. labour market, education and training data), which can be used to inform the design of skills policies. To allow data users (both in and outside of the government) to unlock the full potential of available skills data, Luxembourg should work on improving the quality of its skills data collection. Luxembourg also has space for strengthening the co-ordination of its approach to skills data collection and management. Given the cross-border nature of Luxembourg's labour market, exploring synergies with international data sources will be equally important for Luxembourg. Luxembourg can strengthen the governance of skills data by:

- improving the quality of Luxembourg's skills data collection
- strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

1 Key insights and recommendations for Luxembourg

This report summary summarises the context, key insights and policy recommendations of the OECD Skills Strategy for Luxembourg. It applies the OECD Skills Strategy Framework to provide a high-level assessment of the performance of Luxembourg's skills system and provides an overview of the four priority areas of focus selected for this project: 1) providing labour-market-relevant adult learning opportunities; 2) guiding and incentivising skills choices; 3) attracting and retaining foreign talent to fill skills shortages; and 4) strengthening the governance of skills data. The summary provides an overview of the policy context for each of the four priority areas and summarises the related key findings and recommendations. The chapters of the full report provide more details on the opportunities for improvement, relevant practices and policy recommendations for Luxembourg in each priority area.

Skills matter for Luxembourg

Skills are vital for enabling individuals and countries to thrive in an increasingly complex, interconnected and rapidly changing world. Countries in which people develop strong skills, learn throughout their lives and use their skills fully and effectively at work and in society are more productive and innovative. They also enjoy higher levels of trust, better health outcomes and a higher quality of life (OECD, 2019^[1]; 2012^[2]). Moreover, as new technologies and megatrends increasingly shape our societies and economies, getting skills policies right becomes even more critical for ensuring societal well-being and promoting inclusive and sustainable growth.

In recent years, Luxembourg's economic performance has been strong. Between 2007 and 2021, annual gross domestic product (GDP) growth, on average, has been higher in Luxembourg than in the European Union (EU). As in other countries, the COVID-19 crisis led to a drop in Luxembourg's GDP growth, although the decline was comparatively mild: GDP contracted by 1.8% in 2020 but recovered quickly and grew by 6.9% in 2021 (OECD, 2022^[3]). The recovery of Luxembourg's labour market from the COVID-19 crisis has been strong. As of March 2022, Luxembourg's unemployment rate (4.7%) was at its lowest in 13 years (ADEM, 2022^[4]). Compared to March 2021, the number of job seekers declined by 22%. While the pandemic has unsurprisingly slowed down Luxembourg's employment growth, the number of new hires in Luxembourg surpassed pre-pandemic levels already in Q3 2020 (STATEC, 2021^[5]).¹ During March 2022, employers declared record numbers of vacancies to Luxembourg's public employment agency (Agence pour le développement de l'emploi, ADEM), resulting in a 35% increase in comparison to March 2021. For the first time in Luxembourg's history, the total number of workers in Luxembourg's labour market surpassed 500 000 in 2022, increasing by 3.7% compared to 2021 (ADEM, 2022^[4]).

However, other persistent and future challenges exist. While productivity levels in Luxembourg are high in international comparison, productivity growth has stagnated (National Productivity Council, 2021^[6]). GDP growth is expected to decelerate to around 2.9% in 2022 and to slow further in 2023 due to various factors, such as flagging consumer sentiment, supply constraints and their effects on the export of goods, and the rising volatility of financial and business services. Furthermore, Russia's invasion of Ukraine poses a significant risk to Luxembourg's economic recovery. While high volatility in the stock markets, a surge in commodity prices and a rise in energy prices are disrupting the production of goods and services, Luxembourg has relatively little direct exposure to Russia, which accounts only for 1.7% of total trade. Nonetheless, the war has exacerbated rising inflation, which is set to increase to 8% in 2022 (OECD, 2022^[3]). Furthermore, higher inflation and bottlenecks in the labour market are leading to rising wage pressures, with the total wage rate rising to 5.4% in 2021 following a wage indexation scheme.² This may further exacerbate prevalent skills shortages in Luxembourg's economy. In 2021, 40% of Luxembourg's chief executive officers (CEOs) identified the unavailability of key skills as a potential threat to their organisations' growth prospects, ranking it among the top-five most frequently cited potential threats (PwC, 2021^[7]). Furthermore, with evidence in growth sectors (such as advanced manufacturing, construction, the health, creative, digital and green sectors) already highlighting recruitment difficulties in middle- and high-skilled jobs – which are expected to grow in the future due to rapid growth and an ageing workforce – reskilling, upskilling and lifelong learning within the existing workforce as well as sourcing international, cross-border workers (OECD, 2021^[8]) become critical.

For Luxembourg, implementing a strategic approach to skills policies is essential to support its efforts to boost economic growth and to build a resilient and adaptable skills system. Luxembourg currently has a unique opportunity to set the right skills policy directions for the next decade and beyond.

Skills are essential for Luxembourg's response to global megatrends

In Luxembourg, as in other OECD countries, megatrends such as digitalisation, globalisation, demographic change and climate change are transforming jobs and how society functions and people interact. To thrive

in the world of tomorrow, people will need a stronger and better-rounded set of skills. These include foundational, cognitive and meta-cognitive, social and emotional, and professional, technical and specialised knowledge and skills. Luxembourg will also need to make better use of people's skills in the labour market and individual workplaces.

Prior to the COVID-19 pandemic, Luxembourg's labour market and society were being reshaped by digital transformation. Between September 2018 and September 2019, 68% of online job vacancies published in Luxembourg required basic digital skills (e.g. use of a computer, Internet, etc.), and 59% required more advanced digital skills (e.g. data analysis, programming language, etc.) (Hauret and Martin, 2020^[9]; Bourgeon et al., 2020^[10]). Moreover, certain jobs (especially in the financial sector) had begun to disappear in Luxembourg, driven by the desire of certain employers to cut costs and invest in technological transformation, leading to redundancies (Huberty, 2018^[11]).

Luxembourg's integration into international trade and global value chains (GVCs) continues to influence the structure and competitiveness of its economic sectors, which in turn has an ongoing impact on skills supply and demand in the labour market. New technologies and trade liberalisation have led to a more globalised world characterised by expanding supply chains and outsourcing certain forms of work. Luxembourg is well integrated in GVCs (Di Filippo, 2018^[12]). It is more open to international trade in services than OECD countries are on average, as shown by the OECD's Services Trade Restrictiveness Indicators (STRIs) (OECD, 2021^[13]).

Demographic change importantly affects Luxembourg's socio-economic outlook. While people aged 65 and up made up 13.9% of Luxembourg's total population in 2012, the figure stood at 14.7% in January 2022 (STATEC, 2022^[14]). However, Luxembourg is ageing slower in comparison to neighbouring countries (LISER, 2011^[15]), primarily due to a large number of foreigners in the country: 53% of Luxembourg's residents are of other than Luxembourgish nationality (STATEC, 2022^[16]) (see Chapter 4). Moreover, on average, these foreign residents tend to be younger than their Luxembourgish counterparts (LISER, 2011^[15]). However, Luxembourg is considerably affected by demographic shifts in the Greater Region,³ where the 65 and over population increased by 20% between 2000 and 2016 (Durand, 2019^[17]). Demographic projections further predict an increase of almost 40% in the Greater Region population aged 65 and over by 2050 (i.e. more than 900 000 additional people). By 2050, the Greater Region will have approximately 3.2 million people over 65, representing more than one-quarter of the Region's total population (Durand, 2019^[17]). Given that Luxembourg sources 46% of its workers from the Greater Region (STATEC, 2021^[5]),⁴ population ageing in the Greater Region will have significant implications for the type and quantity of skills that Luxembourg can expect to count on in the future. Creating high-quality and accessible opportunities for reskilling/upskilling for Luxembourg's residents and workers across the life course (see Chapter 2), as well as guiding and incentivising them to participate in reskilling/upskilling opportunities (see Chapter 3), is therefore paramount.

Environmental challenges – air quality, water pollution, heat waves, waste management and biodiversity loss – have implications for skills. These challenges are associated with a rise in respiratory and cardiovascular diseases, impaired cognitive development and acuity, school absences and poor performance in high-stakes tests, which together lead to long-term cognitive skills depreciation (Horvath and Borgonovi, 2022^[19]). Furthermore, as a result of the green transition, some new “green jobs” will be created, leading to a change in skills needs, while some existing jobs could be eliminated or transformed in terms of their day-to-day tasks and methods (ILO, 2017^[20]; Martinez-Fernandez, Hinojosa and Miranda, 2010^[21]). Sectoral studies developed by Luxembourg's ADEM⁵ count environmental trends among the key underlying forces shaping Luxembourg's labour market and its various sectors (ADEM, 2022^[22]). For example, while retrofitting to increase the energy efficiency of buildings is becoming of increasing importance in Luxembourg's construction sector (ADEM, 2022^[23]), the transition to green and sustainable finance (among others) is shaping skills needs in the financial sector (ADEM, 2022^[24]). The long-term challenge for policy makers will be to help their economies move towards sustainable, highly skilled,

high-productivity activities, including by designing effective upskilling/reskilling pathways for workers who might find their jobs significantly impacted by the green transition.

Against this backdrop, people will increasingly need to upgrade their skills to perform new tasks in their existing jobs or acquire skills for new jobs. Strong foundational, digital, social and emotional skills, such as critical thinking, communication and adaptability, will become essential for people to be resilient in the face of changing skills demands and to succeed in both work and life. In addition, with aspirations to grow jobs in areas such as advanced manufacturing and the health, creative, digital, and green sectors to exploit future opportunities dealing with megatrends, the need for technical, high-skilled workers will be accentuated. Roles in areas such as professional, scientific activities, information and communication technology, finance and insurance (OECD, 2021^[8]), as well as middle-skilled roles, such as in skilled trades, technicians and associate professionals, will be expanded.

The COVID-19 pandemic has disrupted progress and may exacerbate systemic challenges

Luxembourg's first case of COVID-19 was confirmed in February 2020 (Medical Press, 2020^[24]). In March 2020, the Government of Luxembourg imposed a lockdown (including school closures), followed by curfews in October and December 2020 and another round of school closures in February 2021 in response to the deterioration of the sanitary situation (Luxembourg Wort, n.d.^[25]; STATEC, 2022^[26]). As of the end of April 2022, COVID-19 infections in Luxembourg were decreasing (Reuters, 2022^[27]), and Luxembourg's complete vaccination⁶ rate stood at 78.7% of the eligible population (i.e. the five and over population) (Government of Luxembourg, 2022^[28]). Several factors have helped Luxembourg weather the impacts of the pandemic better than most countries. The share of jobs in Luxembourg compatible with teleworking was high in international comparison (although less so for Luxembourg's low-qualified workers) (LISER, 2021^[29]), while the share of workers on temporary contracts in Luxembourg was also smaller than in other countries. In addition, support measures, such as short-time working schemes, helped keep people employed (STATEC, 2022^[26]). To support the economy, the government also implemented a large and multi-pronged policy package in 2020, followed by a more targeted stimulus package in 2021 (IMF, 2021^[30]).

Nonetheless, the impact of the COVID-19 crisis on Luxembourg's economy and society should not be underestimated. The well-being of workers during the lockdown suffered in multiple ways (Beine et al., 2020^[31]). The share of workers in Luxembourg with a high risk of depression increased from 11% in 2020 to 15% in 2021, while the share of those whose emotional well-being had deteriorated and who presented a moderate risk of depression increased from 21% to 25% in the same period (CSL, 2021^[32]). The pandemic also exacerbated Luxembourg's gender inequalities. Women's employment was affected more than men's during the lockdown, while the increase in childcare responsibilities during school closures fell disproportionately on women's shoulders (LISER, 2022^[33]). The economy's recovery has been uneven, and targeted policy support may still be needed for those firms exposed to tourism and global supply disruptions (OECD, 2021^[34]).

The COVID-19 crisis has exacerbated Luxembourg's skills imbalances (i.e. skills shortages, surpluses and mismatches). Already before the pandemic, the share of employers in Luxembourg finding it very or fairly difficult to find employees with the required skills (78%) was significantly higher than other countries, such as Denmark (57%) or Lithuania (65%) (Eurofound, 2019^[36]). In 2021, 40% of Luxembourgish CEOs identified the "(in)availability of key skills" as a potential threat to their organisation's growth prospects, ranking this among the five most pressing business, economic, policy, social and environmental threats (PwC, 2021^[7]). ADEM's sectoral studies show that between 2015 and 2020, the occupations with the greatest shortages in Luxembourg were those traditionally requiring higher-level skills (i.e. occupations in International Classification of Occupations [ISCO] groups 1-3), such as computer engineers and legal experts ⁷ (ADEM, 2022^[21]). With the COVID-19 crisis inducing firms around the world to restructure in ways

that accelerate digitalisation (OECD, 2021^[38]), equipping Luxembourg's labour force with the skills needed in an increasingly digitalised world will be essential to sustain Luxembourg's economic performance in the years to come.

Skills should be at the core of Luxembourg's policy response

The megatrends mentioned above and COVID-19 reinforce the need for Luxembourg to design forward-looking, dynamic skills policies. Strong foundational skills will make people more adaptable and resilient to changing skills demands. Digital, transversal, social and emotional, and job-specific skills (Box 1.1) will become increasingly essential for individuals to succeed in learning, work and life. High-quality learning across the life course should be accessible for everyone to enable full participation in society and to successfully manage transitions in the labour market. Adults will need greater opportunities to upskill and reskill, while learning providers will need to create more flexible and blended forms of learning. Firms will have to adopt more creative and productive ways of using their employees' skills. Finally, robust governance structures will be needed to ensure that reforms are sustainable.

The importance of skills for Luxembourg is also reflected in the European Skills Agenda (European Commission, 2022^[41]), which seeks to: strengthen sustainable competitiveness as set out in the European Green Deal (European Commission, 2022^[38]); implement the first principle of the European Pillar of Social Rights (access to education, training and lifelong learning for everybody in the European Union) (European Commission, 2022^[39]); and build resilience to react to crises (learning from the COVID-19 pandemic). In line with these goals, the European Commission has recommended that Luxembourg improve the quality and efficiency of skills development. While Luxembourg has made substantial progress in reducing achievement gaps among students and early school leaving, more remains to be done to support skill development for adults (European Commission, 2020^[40]) so as to put skills at the top of the agenda to tackle the challenges facing the country and seize the opportunities of the future. This Skills Strategy seeks to support Luxembourg in achieving these aims.

Box 1.1. A wide range of skills are needed for success in work and life

The OECD defines **skills** as **the bundle of knowledge, attributes and capacities** that can be learned and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.

The OECD Skills Strategy 2019 identifies a broad range of skills that matter for economic and social outcomes, including:

- **Foundational skills:** Including literacy, numeracy and digital literacy;
- **Transversal cognitive and meta-cognitive skills:** Including critical thinking, complex problem solving, creative thinking, learning to learn and self-regulation;
- **Social and emotional skills:** Including conscientiousness, responsibility, empathy, self-efficacy, collaboration, perseverance, self-control, self-organisation, sociability, and self-esteem;
- **Professional, technical and specialised knowledge and skills:** Needed to meet the demands of specific occupations.

Adult learning (see Chapters 2 and 3 of the full report) is measured as participation in formal education and non-formal education during adulthood (25+ years):

- **Formal education** is provided in a structured environment (e.g. schools, colleges, universities or other educational institutions), leading to a certification recognised by a national educational classification.
- **Non-formal education** is also provided in a structured environment but does not lead to a certification recognised by a national education classification. To the extent possible with available data sources, only **labour-market-relevant adult learning provision** is considered, which in Luxembourg is commonly referred to as **continuous professional training** (*formation professionnelle continue*) or **continuous vocational education** and training.

In the context of this Skills Strategy, and similarly, as in Luxembourg's Roadmap for the development of a National Talent Attraction, Development and Retention Strategy, **foreign talent** (see Chapter 4 of the full report) is defined as all foreign-born individuals who could help fill shortages in Luxembourg's labour market. The term does not restrict "talent" to individuals with high-level qualifications (International Standard Classification for Education [ISCED] 2011 levels 5-6).

Skills data (see Chapter 5 of the full report) refer to all data relevant for skills policy making, and most importantly, labour market and education and training data.

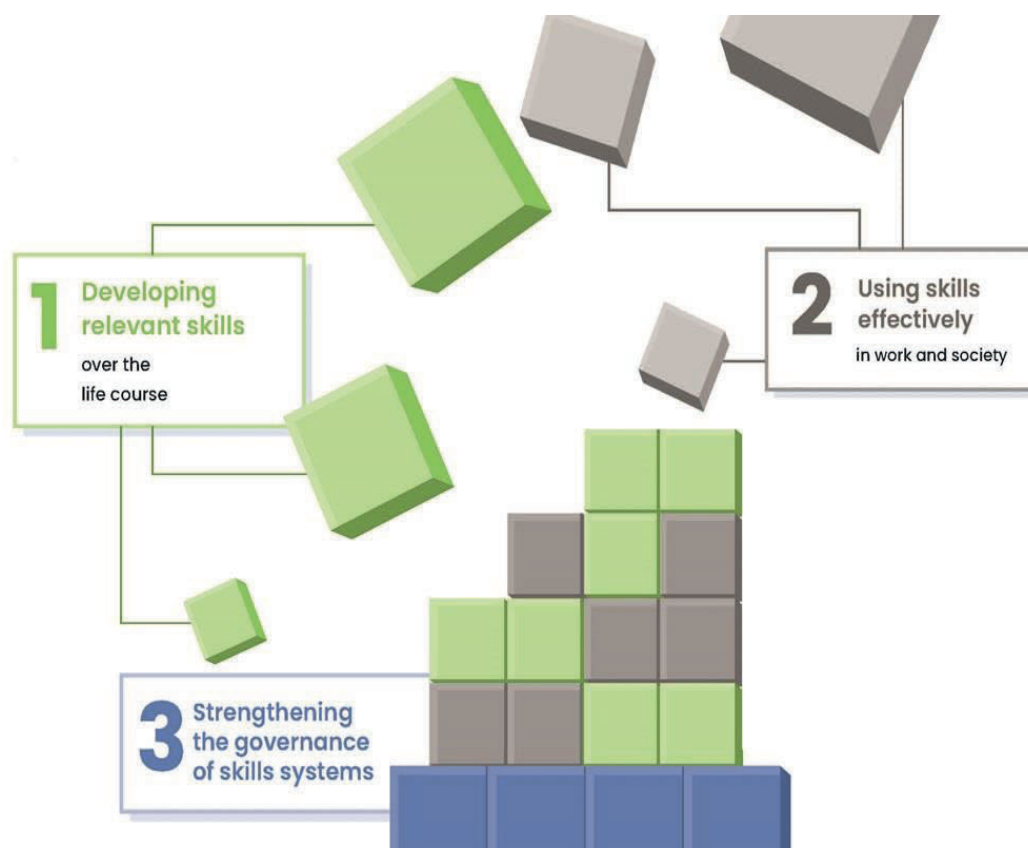
Source: OECD (2019^[1]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, <https://dx.doi.org/10.1787/9789264313835-en>; UNESCO Institute for Statistics (2012^[41]), *International Standard Classification of Education (ISCED) 2011*, <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>; ILO (2022^[42]), *International Standard Classification of Occupations (ISCO)*, <https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/>.

The OECD Skills Strategy for Luxembourg

OECD Skills Strategies provide a strategic and comprehensive approach to assessing countries' skills challenges and opportunities and building more effective skills systems. The OECD collaborates with countries to develop policy responses tailored to each country's specific skills challenges and needs. The foundation of this approach is the OECD Skills Strategy Framework (Figure 1.1), the components of which are:

- **Developing relevant skills over the life course:** To ensure that countries can adapt and thrive in a rapidly changing world, all people need access to opportunities to develop and maintain strong proficiency in a broad set of skills. This process is lifelong, starting in childhood and youth and continuing throughout adulthood. It is also "life-wide", occurring both formally in schools and higher education, and non-formally and informally in the home, community and workplaces.
- **Using skills effectively in work and society:** Developing a strong and broad set of skills is just the first step. To ensure that countries and people gain the full economic and social value from investments in developing skills, people also need opportunities, encouragement and incentives to use their skills fully and effectively at work and in society.
- **Strengthening the governance of skills systems:** Success in developing and using relevant skills requires strong governance arrangements to promote co-ordination, co-operation and collaboration across the whole of government; engage stakeholders throughout the policy cycle; build integrated information systems; and align and co-ordinate financing arrangements. The OECD Skills Strategy for Luxembourg adopted this approach by forming an interdepartmental project team to support the whole-of-government approach to skills policies and engaging a wide variety of stakeholders.

Figure 1.1. The OECD Skills Strategy Framework



Source: OECD (2019^[1]), OECD Skills Strategy 2019: Skills to Shape a Better Future, <https://dx.doi.org/10.1787/9789264313835-en>.

The OECD held a virtual skills seminar in June 2021 to kick off the Skills Strategy, an assessment workshop in October 2021 to identify challenges and opportunities, and a recommendation workshop in April 2022 to develop tailored policy recommendations. Each workshop was attended by more than 120 government and stakeholder representatives. In addition, the OECD held more than 60 bilateral meetings with a wide range of government officials and stakeholders. The consultations during the workshops and bilateral meetings sought not only to enrich the analysis with local insights but also to develop a constructive dialogue and cultivate a shared understanding of skills challenges and opportunities as a basis for taking collective action to improve the skills performance of Luxembourg. Overall, more than 160 participants, who represented ministries and agencies, municipalities, education providers, employers, workers, researchers, and other sectors, were engaged in the context of the OECD Skills Strategy for Luxembourg.

The report was prepared after the initial outbreak of the COVID-19 pandemic and makes recommendations that could facilitate Luxembourg's post-pandemic growth, as well as recommendations to build the performance and resilience of Luxembourg's skills system to further unforeseen challenges in the longer term.

The performance of Luxembourg's skills system

Developing relevant skills

Primary to secondary education is universal, but learning outcomes could be improved

Luxembourg is among the strongest performers in school enrolment from the pre-primary to secondary levels. In 2019, gross enrolment rates at the pre-primary level were higher in Luxembourg (91%) than the OECD average (82%), as well as at the primary level, where enrolment rates were also higher in Luxembourg (105%)⁸ than the OECD average (102%) (World Bank, 2022_[43]). On the other hand, gross enrolment rates at the secondary level in Luxembourg (105%) are close to the OECD average (106%) for the same year (World Bank, 2022_[43]).

However, despite widespread access to schooling, there remain opportunities for the country to improve the skill outcomes of its youth and improve the inclusivity of skills development initiatives for young people. In the latest OECD Programme for International Student Assessment (PISA) round in 2018, Luxembourg performed below the OECD average. Students in Luxembourg scored below the OECD average in key skill areas such as reading, mathematics and science. Low scores among socially disadvantaged students largely account for this underperformance. The link between socio-economic status and performance in PISA is stronger in Luxembourg than in any other participating country. For instance, in reading tasks, advantaged students in Luxembourg performed better than disadvantaged students by 122 score points – significantly higher than the OECD average difference of 89 score points (OECD, 2019_[44]).⁹

Tertiary education attendance is high but needs to be more inclusive

Tertiary education has been expanding in the last few decades, and Luxembourg has performed relatively well compared to other OECD countries in terms of its provision of tertiary education to young adults, especially women. In 2020, 64% of 25–34-year-old women in Luxembourg had a tertiary qualification in comparison to 53% of males, and the country performed better than the OECD average for both genders (52% for young women and 39% for young men) (OECD, 2021_[45]). Furthermore, international student mobility at the tertiary level has risen steadily, and international students represented 49% of tertiary students in Luxembourg in 2019. However, as with other levels of education, more could be done to improve inclusivity and outcomes for disadvantaged students. For instance, students from low- and lower-middle-income countries represented only 13% of Luxembourg's international student base, as opposed to 29% in OECD countries (OECD, 2021_[45]).

The culture of adult learning is relatively strong, but challenges remain

Luxembourg has a relatively strong adult learning culture compared to other OECD countries. According to the latest Labour Force Survey data (2020), participation in adult learning is higher in Luxembourg (16%) than in the European Union (9%) and the Greater Region average (8%) and surpasses neighbouring countries such as France (12%), Germany (7%) and Belgium (4%). Furthermore, employees in Luxembourg have higher participation rates in continued vocational training than most other countries across the OECD.

However, many challenges remain in Luxembourg's adult learning system, such as implementing quality assurance measures and ensuring that existing training offers are relevant to labour market needs. For example, insights from the latest EU Company Survey in 2019 found that 27% of employers in Luxembourg had concerns that the training provided to their employees was of low value in terms of addressing their employees' skills needs, compared with 25% of employers in the European Union and 22% of those in France. Furthermore, participation in adult learning also differs significantly across socio-economic backgrounds. Groups with lower participation rates in Luxembourg include those who are low-qualified, in

lower-skilled jobs, older workers above 55 years old, cross-border workers, males and those in smaller businesses and low training sectors. For these groups, several practical barriers make it difficult to access adult learning, such as scheduling conflicts, health reasons, lack of guidance and costs, among others.

Using skills effectively

Luxembourg's performance in attracting foreign talent is strong but could be further improved

Luxembourg's strong economic performance has led to rapid job growth over the past decade. The country's unemployment rate has been declining steadily since 2015 and was one of the lowest across the OECD in 2021 at 5.7%. While its small population size limits the domestic supply of labour, the large numbers of cross-border workers in Luxembourg's labour market have alleviated labour pressures and have helped keep the economy dynamic and fast-growing. Around 47% of the workforce is composed of cross-border workers. Only 26% of the workforce is made up of resident workers with Luxembourgish nationality. Some 22% of the workforce are residents with an EU nationality (other than Luxembourgish), and a small (5%) yet rapidly increasing share of the workforce consists of resident workers with a non-EU nationality. Luxembourg's reliance on foreign talent manifests itself across most sectors. With the exception of public administration, most employees in each of Luxembourg's ten largest sectors (in terms of the number of active employees) are made up of non-Luxembourgish residents or cross-border workers (see Chapter 4 of the full report).

Luxembourg has several opportunities to further improve its attraction of foreign talent. The efficiency of Luxembourg's admission procedures could be improved, as international evidence on work permits shows that the maximum processing time in Luxembourg is higher than statutory times in most OECD countries for which data are available. There is also room for making migration policy more responsive to labour market needs. Currently, only high-skilled foreign talent is exempted from the "labour market test" (an assessment of whether a particular job could be performed by a jobseeker in the national labour market before allowing the existing vacancy to be filled by a foreign worker), despite Luxembourg's talent shortages across skill levels. Affordability of living in Luxembourg (not only) for foreign talent should be improved (including by expanding the supply of affordable housing and evaluating and potentially strengthening the financial incentives for attracting foreign talent) and providing information for foreign talent and Luxembourg's employers strengthened.

Furthermore, the retention of foreign talent is just as important as talent attraction, and Luxembourg could better facilitate the integration of foreign workers and their spouses into society and the labour market. For example, the employment rate of foreign spouses in Luxembourg is 16 percentage points lower than the employment rate of the principal migrant whom they accompany (see Figure 4.11 in Chapter 4 of the full report). Furthermore, comprehensive programmes offering systematic support to foreign workers' spouses in the social and labour market integration process are not available. Finally, while the share of international students in Luxembourg's higher education system (49%) is the highest in the OECD (OECD, 2021^[45]), data collected via an employment study conducted by the University of Luxembourg show that there is still space for better facilitating the study-employment transitions of international students into Luxembourg's labour market.

The supply of skills needs to be better aligned with labour market needs

While Luxembourg has developed a relatively strong workforce stemming from high tertiary education attendance and has attracted a sizeable stock of foreign talent, ongoing improvements are required to maintain this position and broaden opportunities for all over time. For example, more could be done to ensure the relevance of education and training offers to the labour market's needs. Employees do not always have the skills required for their jobs. The share of employers in Luxembourg (78%) who find it very

or fairly difficult to find workers with the right set of skills is significantly higher than in other countries, such as Denmark (57%) or Lithuania (65%) (Eurofound, 2019^[36]). Furthermore, 40% of CEOs in Luxembourg find that insufficient access to the skills they need potentially threatens their organisations' growth (PwC, 2021^[7]). These are evident in meta-skills and evolving middle and higher technical skills. Addressing these challenges requires improving ongoing relevance and accessibility to high-quality provision and extending the reach to help individuals progress, especially those from under-represented groups, such as low-skilled workers and those with low qualifications. There will also be a crucial role for Luxembourg's guidance services to inspire individual engagement in learning within growth areas.

The full and effective use of skills in the workplace could be strengthened

Compared to other OECD countries, Luxembourg has a higher proportion of “middle” performing businesses adopting people-centred high-performance work practices (HPWPs), which promote active skills use. As such, there is greater scope to increase investment in high-performing, high-investment businesses to reach the levels of international leaders (Eurofound, 2019^[35]). Furthermore, smaller firms often lag in adopting HPWPs, and there is a relatively high share of zombie firms in Luxembourg, which have low productivity and would normally exit in a competitive market. Increasing productivity and strengthening competitiveness requires strengthening management and working practices. Moreover, Luxembourg could do more to increase the adoption of digital technologies and innovation, as only 1.3% of its GDP is allocated to research and development (R&D) activities, owing to a decline in business R&D over the past decade. This is far below the OECD average and does not meet its 2020 national target of 2.3% to 2.6% of GDP (OECD, 2019^[46]).

Strengthening the governance of skills systems

Strong foundations for a whole-of-government approach are present but could be improved

Luxembourg has strong foundations in place to strengthen inter-ministerial co-ordination for adult learning. This includes the provision of guidance services at different stages of education and working life through governance bodies, such as the Maison de l'orientation (MO), which brings together ministries with skills-relevant mandates and serves as a guidance co-ordination hub (MO, 2022^[47]). In addition to horizontal co-operation across ministries, a whole-of-government approach in Luxembourg can also be observed through the strong role that local municipalities play in providing adult learning opportunities for residents and offering their own adult learning centres.

Nonetheless, across OECD countries, major skills challenges are rooted in inadequate co-ordination and the lack of adequate information on skills and learning outcomes, with Luxembourg being no exception (OECD, 2020^[48]). Since roles and responsibilities for skills governance are distributed across many different ministries and departments in the country, there is room to strengthen co-ordination mechanisms across the whole of government. For instance, addressing Luxembourg's barriers to attracting and retaining foreign talent would require designing a comprehensive strategy involving many ministries that have roles in integrating cross-border workers into society and the labour market. In recognition of this need, Luxembourg created an inter-ministerial working group to design a Roadmap for the development of a National Talent Attraction, Development and Retention Strategy in partnership with stakeholders outside the government.

Co-ordination with stakeholders is essential for effective skills policies

In Luxembourg, diverse stakeholders, such as chambers representing employers and employees across sectors, play a key role in skills policies through their involvement in skills policies as well as their direct provision of education and training. Co-ordinating effectively with these stakeholders enables policy makers to benefit from their expertise and ensure that policies acquire a higher level of legitimacy and

accountability (OECD, 2020^[49]). The engagement of stakeholders occurs in Luxembourg through formal bodies, such as the Tripartite Coordination Committee (Comité de Coordination Tripartite), which seeks to foster consensus among government, employer and employee representatives on economic and social issues, as well as more informal bodies, such as the Skillsdësch, which brings together different ministries and stakeholders to discuss skills policies. ADEM and the Association of Luxembourg Companies (UEL) have also been working together since 2015 in the context of the Companies, Partners for Employment Partnership (Entreprises, partenaires pour l'emploi) to raise awareness of the services offered by ADEM among employers, organise recruitment days in various sectors and set up tailor-made training for job seekers.

The development of the country's key skills-related strategies and policies, such as the Lifelong Learning Strategy (2012), has involved the participation of a wide variety of stakeholders, such as employer and employee representatives, among many others. However, since the labour market context, in particular during COVID-19, has significantly changed, an updated and forward-looking adult learning strategy would be needed to further facilitate co-ordination between the government and stakeholders in achieving the ambitions set out in the Recovery and Resilience Plan 2021-2026 (European Commission, 2021^[50]) as well as the goals in the EU Skills Agenda 2025 (European Commission, 2022^[37]).

High-quality and relevant skills data from both national and international sources are important for Luxembourg

Given Luxembourg's complex workforce structure, having timely and reliable data on current and future skilling needs is central to aligning skills supply and demand. However, the country's skills data governance could be strengthened on several fronts. There is room to improve the quality of Luxembourg's skills data collection in terms of accuracy, coverage and granularity. Moreover, there is space to better facilitate skills data co-ordination and exchanges both within the government and with relevant stakeholders in Luxembourg. With its labour market extending beyond national borders, Luxembourg could equally benefit from building stronger synergies with international data sources, especially to better understand the changing skills supply and demand in the Greater Region.

The policy context in Luxembourg

A range of policies in Luxembourg recognises the importance of skills

Luxembourg has already developed a range of strategies and reforms (see Table 2.1 in Chapter 2 of the full report for a comprehensive overview) to help the country overcome the challenges of its skills system and seize the opportunity to leverage its investments in skills to advance its economic and societal ambitions. Relevant priorities and goals from these strategies are summarised at the beginning of each chapter of the full report to highlight their connection with the OECD's assessment and recommendations.

Furthermore, as detailed in the chapters of the full report, Luxembourg has embarked on a range of skills policy reforms in recent years. These include introducing several strategies that have given adult learning and lifelong learning a high priority on the country's political agenda. For instance, the Lifelong Learning Strategy (2012) was developed in collaboration with various actors to support the skills development of Luxembourg's workforce. The strategy introduced, among others, measures to ensure the quality of adult learning, a single information portal on lifelong learning, the professionalisation of guidance services and a consultative body on lifelong learning. Since then, several other strategies and initiatives supporting lifelong learning and adult learning have been put in place to directly address the effects of global megatrends on the country's workforce, such as the Digital Skills and Jobs Coalition (2017) and the Recovery and Resilience Plan of Luxembourg (2021), which both identify concrete measures to raise digital skills in the country. Similarly, the more recent Artificial Intelligence: A Strategic Vision for

Luxembourg (2020) provides recommendations on how the country could best meet future needs for artificial intelligence-related skills.

Luxembourg has also taken concrete steps to improve the resilience and inclusivity of its skills system by taking a strategic, co-ordinated approach to foreign talent attraction and retention efforts and addressing the needs of cross-border workers and vulnerable and under-represented groups. As mentioned above, a Roadmap for the development of National Talent Attraction, Development and Retention Strategy was developed by several governmental and non-governmental stakeholders. In turn, the National Action Plan for Integration (2018) focuses on improving the integration of all non-Luxembourgers into society and labour markets by supporting adult learning opportunities, language training, integration courses and active labour market programmes.

Policy areas and recommendations

Based on the OECD's initial assessment of the performance of Luxembourg's skills system and discussions with the Luxembourgish National Project Team, four priority areas were identified for this Skills Strategy. Over the course of developing the Skills Strategy, the OECD identified opportunities for improvement and developed recommendations in each priority area based on in-depth desk analysis and consultations with the Government of Luxembourg and stakeholder representatives. The four priority areas are:

1. Providing labour-market-relevant adult learning opportunities in Luxembourg
2. Guiding and incentivising skills choices in Luxembourg
3. Attracting and retaining foreign talent to fill skills shortages in Luxembourg
4. Strengthening the governance of skills data in Luxembourg.

The development of youth's skills was not selected as a priority area, as there are already many ongoing policy reforms in this area, and their impact would have to be assessed before considering further reforms. Furthermore, the youth who leave Luxembourg's education system represent only around half of Luxembourg's labour market workers. For these reasons, this project has concentrated on the skills challenges and opportunities in Luxembourg once individuals have left their initial education.

The summaries below highlight the key findings and recommendations for each priority area, while the chapters of the full report provide a fuller description of these.

Priority Area 1: Providing labour-market-relevant adult learning opportunities in Luxembourg (Chapter 2 of the full report)

Opportunity 1: Improving the coherence and accessibility of adult learning opportunities

It is critical for Luxembourg's adult learning system to be coherent in order to be effective. While both public and private sector actors in Luxembourg are active in providing adult learning opportunities, they could work more closely together, learn from each other and be guided by an overarching strategy to co-ordinate their respective efforts and avoid unnecessary overlaps, contradictions and gaps. As Luxembourg is economically closely integrated into the Greater Region, more co-ordination with actors in the Greater Region could improve the coherence of provided adult learning opportunities. It is also important to support all adults, regardless of their socio-economic background, to access upskilling and reskilling programmes so they are well-equipped to thrive in an evolving labour market. Access is a challenge when prospective adult learners do not have the necessary prerequisites for adult learning programmes or when the adult learning programmes are not flexible enough to accommodate their schedules or are not tailored enough to their specific needs. Opportunity 1 describes how Luxembourg can improve the coherence and accessibility of adult learning opportunities (Table 1.1).

Table 1.1. Opportunity 1: Improving the coherence and accessibility of adult learning opportunities

Policy directions	Recommendations	Responsible parties
Improving the coherence of adult learning opportunities	1.1. Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors	<ul style="list-style-type: none"> • INFPC, including MESR
	1.2. Develop a co-operation agreement on adult learning provision among actors in the Greater Region	<ul style="list-style-type: none"> • MENJE, MTEESS, MESR, MFAMIGR and other relevant ministries • Relevant counterparts in the Greater Region
Improving the accessibility of adult learning opportunities	1.3. Develop modules based on a common skills classification framework (e.g. ESCO) to make them transferable across providers, such as between providers of initial and continuous training, as well as between public and private providers	<ul style="list-style-type: none"> • MENJE
	1.4. Expand basic digital skills modules across adult learning programmes through digital learning platforms	<ul style="list-style-type: none"> • MENJE, ADEM, Digital Luxembourg • Public and private providers

Note: INFPC: Institut national pour le développement de la formation professionnelle continue; MESR: ministère de l'Enseignement supérieur et de la Recherche; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; ADEM: Agence pour le développement de l'emploi.

Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities

Luxembourg's adult learning system needs to become more responsive to the evolving needs of the labour market. Around 27% of employers in Luxembourg had concerns that the training provided to their employees was of low value in terms of addressing their employees' skills needs. The long-term unemployed (51% of unemployed) and individuals needing reskilling due to health reasons (19% of unemployed) in Luxembourg also require labour-market-relevant adult learning opportunities to improve their employment and career prospects. Besides relevance, which is about providing adult learning opportunities that meet labour market needs, the quality of adult learning programmes, which is about meeting clearly defined quality standards, also matters. Due to the lack of a rigorous accreditation process in Luxembourg, there has been a proliferation of training providers with limited oversight. Around 78% of training providers are private, and around 73% of training providers are comprised of a single trainer or between one to four employees. Currently, there are no common quality standards on how to develop and implement the curricula of adult learning programmes. Similarly, there is no national certification procedure to become an adult learning teaching staff nor a regular professional development requirement for such staff. Opportunity 2 describes how Luxembourg can increase relevance and ensure the quality of adult learning opportunities (Table 1.2).

Table 1.2. Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities

Policy directions	Recommendations	Responsible parties
Increasing the relevance of adult learning opportunities	1.5. Develop a regular and systematic curriculum review process to ensure labour market relevance of formal adult education programmes	<ul style="list-style-type: none"> Public and private providers Employer and employee representatives
	1.6. Expand the provision of tailored training offers to the long-term unemployed and individuals in need of reskilling for a new job by developing modular training programmes with training partners	<ul style="list-style-type: none"> ADEM (lead role) Public and private providers
Ensuring the quality of adult learning opportunities	1.7. Establish an adult learning quality assurance system	<ul style="list-style-type: none"> MENJE (lead role) Relevant ministries, government agencies Employers and employee representatives
	1.8. Require individuals who want to become adult learning teaching staff to be certified through fulfilling specified criteria related to teaching	<ul style="list-style-type: none"> MENJE

Note: ADEM: Agence pour le développement de l'emploi; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse.

Priority Area 2: Guiding and incentivising skills choices in Luxembourg (Chapter 3 of the full report)

Opportunity 1: Improving guidance services for adult learning

Career guidance services are growing in importance in skills systems to help individuals successfully navigate a constantly evolving labour market and skills landscape at different stages of their lives, with an increasingly complex set of potential options and pathways available to them. New research has started to quantify that change (OECD, 2021^[51]) highlighting a rising demand for career guidance among adults and young people – indeed, four out of ten adults recently reported that they had spoken to a guidance advisor in the previous five years. The increasing importance of guidance services is clearly recognised in Luxembourg, with action being taken to better co-ordinate guidance services for individuals of all ages through the establishment of the MO. The importance of career guidance is particularly underlined during turbulent labour market conditions, such as those generated by the COVID-19 pandemic, which intensified industrial restructuring and increased the risk of job displacement (CEDEFOP, 2020^[52]). Through such advice, individuals need a range of support to make the best skills choices in a complex ecosystem: assess their interests, build individual resilience, and respond to changing employment and skills requirements. As Luxembourg's skills system evolves, this inevitably calls for a change too in guidance services to ensure that they are working sufficiently for adults as well as young people. They also need to draw consistently on the latest labour market evidence and industry insight to ensure timely and high-quality advice. Opportunity 1 describes how Luxembourg can improve guidance and counselling on adult learning (Table 1.3).

Table 1.3. Opportunity 1: Improving guidance services for adult learning

Policy directions	Recommendations	Responsible parties
Evaluating and regularly updating the content of guidance services	2.1. Develop a regular research programme to keep the content of guidance relevant, drawing on evaluative research about the operation of the guidance service and nationally co-ordinated labour market information	<ul style="list-style-type: none"> The MO through the Forum Orientation Contributions of labour market information from ADEM, IGSS, employer and employee representatives

Policy directions	Recommendations	Responsible parties
Strengthening the co-ordination and delivery of guidance services	2.2. Develop an engagement strategy to more actively involve employer and employee representatives in guidance services	<ul style="list-style-type: none"> The MO through the Forum Orientation Employer and employee representatives
	2.3. Revise Luxembourg's National Strategic Plan for career guidance to ensure its vision and strategic priorities are relevant for the future	<ul style="list-style-type: none"> The MO through the Forum Orientation Individual guidance partners
	2.4. Improve quality assurance of guidance services	<ul style="list-style-type: none"> The MO through the Forum Orientation Guidance experts/consultants International network of guidance professionals
Widening access to guidance services	2.5. Customise guidance services to the needs of different vulnerable groups (e.g. the low-qualified, cross-border workers, the unemployed, older workers and those with health needs), combining awareness raising with tailored, enhanced advice to widen access	<ul style="list-style-type: none"> The MO through the Forum Orientation Additional actors competent for each vulnerable group, e.g. local community groups

Note: MO: Maison de l'orientation; ADEM: Agence pour le développement de l'emploi; IGSS: Inspection générale de la sécurité sociale.

Opportunity 2: Improving financial incentives for adult learning

In Luxembourg, lower levels of adult learning participation can be observed among those low-qualified, in lower-skilled jobs, older workers, cross-border workers, males and those in smaller businesses and low training sectors. If adult learning participation is to be raised, it is important to address the market failures that have led to employers and individuals under-investing in adult learning and limiting economic and social prospects. Across OECD countries, various financial incentives exist in the “potential” policy toolkit to overcome barriers and incentivise greater investment in adult learning to enhance individual and business opportunities and prosperity. However, for individuals in Luxembourg, the cost of participation in adult learning is among the three most commonly reported barriers hindering participation. Furthermore, access to employer-financed training in Luxembourg is below the EU average. Therefore, to increase participation in adult learning, it will be important to strengthen existing financial incentives for individuals to participate in learning as well as the incentives for employers to provide adult learning opportunities. The overriding aim of efforts in these areas would be to improve the uptake of adult learning and the skills mix of the workforce moving forward, creating greater opportunities for all in the Luxembourg economy, thus fulfilling a key strategic aspiration of the Luxembourg skills system. Opportunity 2 describes how Luxembourg can improve financial incentives for adult learning (Table 1.4).

Table 1.4. Opportunity 2: Improving financial incentives for adult learning

Policy directions	Recommendations	Responsible parties
Targeting better financial incentives to individual needs	2.6. Enhance the customisation and targeting of current financial incentives to better support vulnerable groups	<ul style="list-style-type: none"> MENJE, MTEESS (lead roles) CIF consultative committee
	2.7. Regularly review and develop customised and targeted vouchers to stimulate the take-up of training for future skills in high demand	<ul style="list-style-type: none"> MENJE, MTEESS Relevant ministries, government agencies Employer and employee representatives
Targeting better financial incentives to employer needs	2.8. Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train	<ul style="list-style-type: none"> MENJE (lead role) Co-funding consultative committee

Policy directions	Recommendations	Responsible parties
	2.9. Design and pilot collaborative training incentives (such as sector training funds) for targeted networks of businesses to overcome market failures of under-investment in skills	<ul style="list-style-type: none"> • Employer and employee representatives • MENJE, MTEESS • Co-funding consultative committee • Relevant ministries, government agencies
	2.10. Create with industry partners a Future Innovation Upskilling Fund for employers to support strategic and proactive workforce upskilling through workplace transformations	<ul style="list-style-type: none"> • MENJE, MTEESS and MECO (lead roles) • Employer and employee representatives

Note: MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; CIF: congé individuel de formation; MECO: ministère de l'Économie.

Priority Area 3: Attracting and retaining foreign talent to fill skills shortages in Luxembourg (Chapter 4 of the full report)

Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs

The large number of foreign-born workers in Luxembourg's labour market suggests that Luxembourg is already an attractive destination for foreign talent. Many "pull factors" help Luxembourg attract foreign talent, including high quality of life, a safe living environment and attractive incomes. Nonetheless, assessing Luxembourg's attractiveness internationally, an opportunity for improvement remains, especially in the context of a dynamic future labour market and the ongoing need to ensure a steady supply of highly technical middle and higher skills in response to industrial restructuring and growth areas in advanced manufacturing, and the creative, digital and green sectors. Access to Luxembourg and its labour market could be better facilitated. There is room to increase the efficiency of admission procedures, better reflect labour market needs in migration policy, and improve cross-border mobility. The cost of living in Luxembourg poses further obstacles to attracting foreign talent. While incomes in Luxembourg are high, so is the cost of living. Housing prices, in particular, have been increasing rapidly since the start of 2019 for both new and existing dwellings. On average, housing prices have risen by 9.7% per annum over the last five years, almost double the EU average of 4.9% (OECD, 2022^[53]). In addition, recruiting foreign talent could be better facilitated by strengthening the provision of information to foreign talent and Luxembourg's employers. Stakeholders have agreed that Luxembourg lacks an internationally recognisable "nation brand", and employers and foreign talent could benefit from improved, accessible and regularly updated information on international hiring processes and opportunities. Opportunity 1 describes how Luxembourg can improve in facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs (Table 1.5).

Table 1.5. Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs

Policy directions	Recommendations	Responsible parties
Improving the accessibility of Luxembourg to foreign talent	3.1. Improve the efficiency of talent admission processes through greater digitalisation	<ul style="list-style-type: none"> • MAEE • MinDigital
	3.2. Elaborate a list of shortage occupations for talent admission purposes, updated regularly	<ul style="list-style-type: none"> • ADEM, MTEESS • MAEE • MECO • Employers

Policy directions	Recommendations	Responsible parties
	3.3. Facilitate cross-border workers' daily access to Luxembourg's labour market by further facilitating cross-border transport, supporting the creation and use of co-working spaces near the borders, increasing the flexibility of working hours and expanding teleworking possibilities	<ul style="list-style-type: none"> Government of Luxembourg Employers
Supporting the affordability of living of foreign talent in Luxembourg	3.4. Review the nature, range, and timeframe of, and eligibility conditions for, the benefits granted under the in-patriate tax regime based on the results of the regime's planned evaluation	<ul style="list-style-type: none"> MFIN
Strengthening the information provision for, and exchange between, foreign talent and Luxembourg's employers	3.5. Strengthen synergies between nation branding and foreign talent attraction strategies	<ul style="list-style-type: none"> MAEE MECO
	3.6. Expand the provision of information on international job-matching processes and opportunities by further improving the Work in Luxembourg portal, and by raising awareness of the EURES portal	<ul style="list-style-type: none"> ADEM EURES MECO MFIN MAEE
	3.7. Support opportunities for direct information exchange between foreign talent and employers by participating in targeted international job fairs and by considering the organisation of international job-matching programmes	<ul style="list-style-type: none"> ADEM MAEE MECO

Note: MAEE: ministère des Affaires étrangères et européennes; MinDigital: ministère de la Digitalisation; ADEM: Agence pour le développement de l'emploi; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MECO: ministère de l'Économie; MFIN: ministère des Finances; EURES: European Employment Services.

Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market

While Luxembourg could further improve its capacity to attract foreign talent, retention will be equally important to ensure that Luxembourg can benefit from the skills and talent it receives from abroad in the long term. Data from the Inspection générale de la sécurité sociale (IGSS) show that only around 44% of Luxembourg's residents with an EU nationality (other than Luxembourgish) who started working and living in Luxembourg in 2015 were still living in Luxembourg in 2020, while the figure stands at 42% for non-EU nationals residing in Luxembourg during the same period. Evidence suggests that Luxembourg ranks among the top ten OECD performers in talent retention, yet space for improvement still exists. To support the retention of foreign talent, integration of said talent into society and the labour market is essential. While Luxembourg has developed targeted policy tools supporting the integration of foreign talent, their take-up could be improved. For example, Luxembourg's language training for foreign talent could be further strengthened, and integration support for spouses of foreign talent could be more ambitious and systematic. Equally, there is space to better facilitate the transition of former international students into Luxembourg's labour market. Opportunity 2 describes how Luxembourg can improve in facilitating the integration of foreign talent and their families into Luxembourg's society and labour market (Table 1.6).

Table 1.6. Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market

Policy directions	Recommendations	Responsible parties
Supporting the integration of foreign talent into Luxembourg's society	3.8. Raise awareness of the benefits of the Welcome and Integration Contract (CAI)	<ul style="list-style-type: none"> MFAMIGR University of Luxembourg ADEM
	3.9. Create better opportunities for inter-cultural exchanges	<ul style="list-style-type: none"> MFAMIGR

Policy directions	Recommendations	Responsible parties
	3.10. Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses	<ul style="list-style-type: none"> • MTEESS • MFAMIGR • MENJE
Facilitating the integration of foreign talent's spouses into Luxembourg's labour market and society	3.11. Develop comprehensive integration programmes for accompanying spouses of foreign talent	<ul style="list-style-type: none"> • MFAMIGR, MAEE (lead) • ADEM, MENJE, MESR
Facilitating the transition of former international students into Luxembourg's labour market	3.12. Support international students in establishing connections with Luxembourg's labour market during their studies by increasing the authorised number of hours for working alongside studies and developing targeted career guidance services	<ul style="list-style-type: none"> • MTEESS • University of Luxembourg
	3.13. Expand opportunities for former international students from third countries to legally remain in Luxembourg to look for a job following the completion of their studies	<ul style="list-style-type: none"> • MAEE • MTEESS
	3.14. Support the alignment of the higher education offer to labour market needs by considering introducing funding and/or regulatory incentives	<ul style="list-style-type: none"> • MESR • University of Luxembourg

Note: MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; ADEM: Agence pour le développement de l'emploi; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MAEE: ministère des Affaires étrangères et européennes; MESR: ministère de l'Enseignement supérieur et de la Recherche.

Priority Area 4: Strengthening the governance of skills data in Luxembourg (Chapter 5 of the full report)

Opportunity 1: Improving the quality of Luxembourg's skills data collection

Luxembourg collects a wide variety of quantitative and qualitative data, which can inform the design of skills policies, including labour market data and education and training data. Labour market data are commonly used as proxies for analysing evolving skills needs because they allow for the observation of growth or decline in employment in specific occupations. To allow data users (both in and outside of the government) to unlock the full potential of Luxembourg's labour market data, Luxembourg should work on addressing accuracy, coverage and granularity challenges of certain labour market data sources, including social security data and vacancy data. Education and training data (e.g. on attainment, participation, outcomes, expenditure, curricula, etc.) provide important information on the access, quality and relevance of the supply of education and training opportunities. Going forward, Luxembourg has opportunities to further expand its education and training data and strengthen its granularity. Opportunity 1 describes how Luxembourg can improve the quality of its skills data collection (Table 1.7).

Table 1.7. Opportunity 1: Improving the quality of Luxembourg's skills data collection

Policy directions	Recommendations	Responsible parties
Improving the accuracy, coverage and granularity of Luxembourg's labour market data	4.1. Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising	<ul style="list-style-type: none"> • CCSS • IGSS • RETEL • ADEM • Employers and their representatives
	4.2. Explore the possibility of including ADEM's vacancy data in CEDEFOP's Skills-OVATE tool	<ul style="list-style-type: none"> • ADEM • LISER
	4.3. Increase the share of job postings created and reported by employers to ADEM, by designing targeted incentives and services for employers, especially small and medium-sized enterprises, and through employer-led awareness raising	<ul style="list-style-type: none"> • ADEM • Employers and their representatives

Policy directions	Recommendations	Responsible parties
	4.4. Review existing employer surveys, together with administrative data on skills needs to help assess the need for a national employer survey	<ul style="list-style-type: none"> Trends working group (ADEM and UEL) STATEC
	4.5. Adopt a skills-based occupational classification to link occupations to skills	<ul style="list-style-type: none"> ADEM
Expanding the range and strengthening the granularity of Luxembourg's education and training data	4.6. Consider combining graduate surveys in higher education with administrative data	<ul style="list-style-type: none"> University of Luxembourg MESR
	4.7. Initiate tracking of adult learners' outcomes by creating a centralised training register interoperable with administrative data and by considering introducing a nationwide survey of adult learners' outcomes	<ul style="list-style-type: none"> INFPC STATEC
	4.8. Incentivise adult learning providers to describe the learning outcomes of their courses in sufficient detail, and develop an information technology tool helping to extract structured information on skills from the learning outcomes' descriptions	<ul style="list-style-type: none"> INFPC

Note: ADEM: Agence pour le développement de l'emploi; CEDEFOP: European Centre for the Development of Vocational Training; CCSS: Centre commun de sécurité sociale; IGSS: Inspection générale de la sécurité sociale; RETEL: Réseau d'études sur le travail et l'emploi; LISER: Luxembourg Institute of Socio-Economic Research; UEL: Union des Entreprises Luxembourgeoises; STATEC: Institut national de la statistique et des études économiques; MESR: ministère de l'Enseignement supérieur et de la Recherche; INFPC: Institut national pour le développement de la formation professionnelle continue.

Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg

A strategic and co-ordinated approach to collecting and managing public and even private data is important for taking full advantage of the social, scientific, economic and commercial potential of data resources. Stakeholders in Luxembourg have highlighted that Luxembourg lacks a co-ordinated approach to skills data collection and management. There is low awareness of all the existing skills data sources, as well as what they cover and how they can be accessed, which limits the extent to which they can be fully leveraged to inform the design and implementation of Luxembourg's skills policies. In addition, efforts to improve Luxembourg's skills data collection and use often occur in an uncoordinated fashion. Skills data exchanges between government institutions and stakeholders remain limited, not least because laws and technical infrastructure allowing for such exchanges must be further developed. Moreover, Luxembourg is not taking full advantage of international skills data sources, especially those of neighbouring countries. However, exploring synergies with international data sources is crucial for Luxembourg, given the cross-border nature of its labour market, and could help Luxembourg assess the potential skills supply and demand in the Greater Region. Opportunity 2 describes how Luxembourg can strengthen co-ordination of, and synergies between, skills data within and beyond Luxembourg (Table 1.8).

Table 1.8. Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg

Policy directions	Recommendations	Responsible parties
Strengthening the co-ordination of labour market and education and training data flows within government and with stakeholders	4.9. Designate a single entity to lead the co-ordination of Luxembourg's skills data collection and analysis efforts	Consortium of public authorities: <ul style="list-style-type: none"> INFPC ADEM IGSS STATEC
	4.10. Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term	<ul style="list-style-type: none"> Consortium of public authorities

Policy directions	Recommendations	Responsible parties
	4.11. Support the development of the National Data Exchange Platform, and advance discussions on the inclusion of skills data among the main priorities of the project	<ul style="list-style-type: none"> • Consortium of public authorities • MESR
	4.12. Establish a simplified protocol for sharing existing labour market data by introducing agency-specific “data passports” to reduce the bureaucratic burden for recurrent institutional data users	<ul style="list-style-type: none"> • Consortium of public authorities
	4.13. Increase the value of the existing and new skills data collections by better facilitating further publication of open data on skills	<ul style="list-style-type: none"> • Consortium of public authorities • Ministry of State
Building synergies between Luxembourg's and neighbouring countries' data sources to improve the skills data availability for the Greater Region	4.14. Develop a comprehensive mapping of the neighbouring countries' data sources on skills	<ul style="list-style-type: none"> • Research institutes • MFAMIGR • IBA-OIE
	4.15. Promote the establishment of a data exchange platform for skills data within the Greater Region	<ul style="list-style-type: none"> • Consortium of public authorities • MFAMIGR • IBA-OIE

Note: INFPC: Institut national pour le développement de la formation professionnelle continue; ADEM: Agence pour le développement de l'emploi; IGSS: Inspection générale de la sécurité sociale; STATEC: Institut national de la statistique et des études économiques; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; IBA-OIE: Observatoire interrégional du marché de l'emploi.

Overview of main recommendations

Box 1.2. Main recommendations to strengthen Luxembourg's skills system

Based on OECD analysis and in-country consultations, two recommendations have been selected for each priority area that could be considered to have the highest priority based on an assessment of potential impact, relevance in the current Luxembourg context, as well as overall support from stakeholders for implementation.

Providing labour-market-relevant adult learning opportunities in Luxembourg

- Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors (Recommendation 1.1)
- Establish an adult learning quality assurance system (Recommendation 1.7).

Guiding and incentivising skills choices in Luxembourg

- Develop an engagement strategy to more actively involve employer and employee representatives in guidance services (Recommendation 2.2)
- Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train (Recommendation 2.8).

Attracting and retaining foreign talent to fill skills shortages in Luxembourg

- Elaborate a list of shortage occupations for talent admission purposes, updated regularly (Recommendation 3.2)
- Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses (Recommendation 3.10).

Strengthening the governance of skills data in Luxembourg

- Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising (Recommendation 4.1)
- Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term (Recommendation 4.10).

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Notes

1. The data do not distinguish between new job creations, jobs retirements and job replacements.
2. Luxembourg's wage indexation scheme automatically increases all salaries and social benefits once the consumer price index rises by more than 2.5% over six successive months. In October 2021, wages increased by 2.5% due to the scheme, which contributed to the 5.4% total wage rise in 2021. On 1 April 2022, the automatic indexation was again set off, further increasing all salaries and social benefits by 2.5%, although a tripartite agreement was reached between government, business, and some trade unions to delay changes by at least one year. The government has increased transfers to poorer households to cover the financial support expected to come from the wage indexation scheme.
3. Greater Region refers to the territories of: 1) Lorraine, in the French region of Grand Est; 2) Wallonia, the Federation Wallonia-Brussels and Ostbelgien in Belgium; 3) Saarland and Rhineland-Palatinate in Germany; and 4) the Grand Duchy of Luxembourg (Grande Région, n.d.^[55]). The Greater Region is characterised by a high degree of political co-operation and economic interdependence.
4. The so-called cross-border workers work in Luxembourg but live in the surrounding regions of Belgium, France and Germany.
5. The sectoral studies were developed on the basis of vacancies declared by employers to ADEM between 2015 and 2020. Despite an existing legal obligation to declare vacancies to ADEM, the declared vacancies cover only approximately 30% of actual job creations in Luxembourg (see Chapter 5 of the full report for more details).
6. A complete vaccination scheme consists of two doses of Moderna, BioNTech/Pfizer, AstraZeneca and Novovax vaccines, or one dose of the Johnson & Johnson vaccine.
7. ADEM's sectoral studies showed that certain traditionally middle- and low-skilled occupations (i.e. occupations in ISCO groups 4-9), such as cooks, head waiters or craft workers, were also suffering from shortages because job seekers showed little interest in pursuing careers in these occupations even if the job-seekers could, in theory, be a suitable match for these shortage occupations (ADEM, 2022^[54]).
8. Gross enrolment rates account for students of all ages, regardless of whether they fall within the official age group for the specified level of education. Early enrolment (i.e. enrolment among students younger than the official age group), late enrolment (i.e. enrolment among students older than the official age group) or grade repetition can cause gross enrolment rates to exceed 100%.
9. When interpreting PISA results for Luxembourg, it is important to note that the students going through the Luxembourgish initial school system represent fewer than half of individuals joining the Luxembourgish workforce. The inequality in PISA scores does not fully account for the inequality in employment outcomes, since half of the workforce was educated elsewhere.