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Efforts to Tackle Skills Shortages Across Policy Domains

Reflections from Migration, Education, and Development Policies

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Efforts to Tackle Skills Shortages Across Policy Domains – Reflections from Migration, Education, and Development Policies

Abigail Goldfarb*, Jasmijn Slootjes*, Belen Zanzuchi*

Abstract:

Labour shortages are becoming a critical issue across Europe, reaching historical highs in various sectors. These shortages pose serious risks, undermining essential services like healthcare and slowing down progress on major initiatives, such as the green transition. Europe's ageing population compounds these challenges, putting further pressure on the labour market and threatening the European Union's economic prosperity. This working paper examines the complex landscape of policy approaches to addressing skills shortages in Europe, offering a comparative analysis of interventions across migration, education, and development policy domains. Through a detailed exploration of policy responses at both national and European levels, the paper provides a typology of alternatives for mitigating shortages across these policy areas, with a particular focus on the digital, care, and construction sectors. By analysing the diversity of policy responses, the paper identifies emerging trends, challenges, and untapped opportunities to bridge skills gaps in Europe including through enhanced coherence across policy domains. From this typology of potential solutions, it concludes with actionable recommendations to inform future policy development.

Keywords: development, education, labour migration, migration governance, mobility schemes, policy coherence, reskilling, skills development, skills mobility, skills recognition, skills shortages, upskilling.

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Table of Contents

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1. Introduction

Skills shortages are plaguing European labour markets. 74 per cent of small and medium-sized enterprises (SMEs) are encountering significant challenges in hiring employees with the necessary skills because of increasing labour shortages and mismatches in skill requirements (von der Leyen, 2023). This lack of skills is poised to have wide-ranging consequences for Europe's competitiveness, economy, welfare states, and the well-being of society. From reduced productivity to slower economic growth, the impact of these shortages could reverberate across industries, hampering innovation and stalling the progress of critical sectors. Skills shortages may also challenge the foundations of European welfare states, with a declining tax base, an increasing dependency ratio, and a lack of workers to provide essential healthcare. Addressing Europe's most pressing challenges requires a workforce with the right skills—from those needed to drive the Green Transition and scale up housing construction in response to the EU-wide housing crisis, to advanced digital competences essential for tackling rising cybersecurity threats.

Skills shortages are shaped by a complex set of interrelated factors, requiring multifaceted solutions that tackle their diverse underlying causes. At the sectoral and occupational levels, skills shortages emerge due to a fundamental mismatch between the capabilities of the workforce and the needs of employers. Demographic decline—particularly due to ageing populations and low fertility rates—constrains the labour supply, compounding skills shortages by contributing to a general shortage of workers. In addition, difficulties in retaining workers, frequently linked to poor working conditions and limited opportunities for career progression, further intensify shortages in critical sectors (European Labour Authority, 2024:11). As Europe's population ages and the number of working-age citizens shrinks, the urgency to address these challenges becomes even more pressing.

The effects of skills shortages are already apparent across critical industries, such as healthcare, construction, and tech, with each sector facing its own specific challenges. In the healthcare sector, the World Health Organization (WHO) estimates that the shortage of health and care workers is 1.6 million in Europe, placing huge pressure on already overburdened healthcare systems (Zapata et al., 2023). Similarly, in the construction sector, skills shortages are delaying infrastructure and housing projects across the EU, worsening the already severe housing crisis. The sector is struggling to attract younger workers, and over 250,000 positions remain unfilled, particularly in countries like Belgium and the Netherlands where large-scale urban development is underway (European Construction Industry Federation, 2023). Additionally, in 2021, over 60 per cent of EU companies that attempted to recruit Information and Communication Technology (ICT) specialists faced challenges in filling these sector positions (Eurostat, 2023). This widening skills gap is limiting Europe's competitiveness in artificial intelligence, cybersecurity, and digital innovation. Collectively, these skills shortages not only undermine industry needs but also threaten Europe's long-term economic stability, sustainability and ability to meet its strategic goals. They also impact citizens, with hospitals already postponing treatments due to a lack of skills (von der Leyen, 2023).

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To tackle these complex challenges, Europe has seen a surge in diverse, multifaceted responses. This boom in initiatives has created a rich yet fragmented patchwork of policies, tools, and programmes that could help mitigate skills shortages. Yet, getting a clear overview of these potential solutions is challenging, as they span multiple policy domains, operate at different geographic and governance levels – from global and EU-led initiatives to national and local initiatives – and pursue varying objectives. They also engage different stakeholders and focus on different types of solutions. For example, some initiatives focus on legal migration frameworks targeting specific sectors, while others provide funding for upskilling the existing workforce. Adding to the complexity, some initiatives may impact skills shortages even if that is not their primary goal. Amid this diverse policy landscape, a clear pattern emerges: the need for a holistic, integrated approach that connects efforts across different policy domains to effectively address skills shortages.

However, the responses thus far have been fragmented and often lack coordination, leading to mixed results. While some countries have successfully attracted skilled labour through immigration policies or investments in local talent and educational reforms, others still struggle to address mismatches between the profiles of their jobseekers and labour market demands. This report examines how migration, development, and education policies have been leveraged to address Europe's skills shortages and explores the challenges and opportunities in developing more effective, integrated, and coherent strategies for the future.

This working paper synthesises key findings from both the national and EU levels to develop a typology of alternatives for addressing skills shortages and examine the comparative advantages and trade-offs of diverse policy approaches. The paper highlights key lessons learned from existing efforts and identifies gaps that could inform future strategies for addressing skills shortages in Europe and beyond. It also identifies opportunities for enhanced coordination across policy domains.

2. Methodology

This working paper builds on a combination of desk research, expert interviews, and document reviews to comprehensively map and analyse policy alternatives to addressing skills shortages across various countries and economic sectors, with a particular focus on the digital, care, and construction sectors.

At the national level, the paper builds upon research conducted by consortium partners of the Global Strategy for Skills (GS4S) Horizon Project in nine countries: Bangladesh, Egypt, Estonia, Germany, Italy, Nigeria, Serbia, Switzerland, and the Netherlands (see Annex 2). In each of these countries, research teams carried out a combination of desk research and policy interviews to examine labour market dynamics in priority sectors and map relevant legal instruments and policy initiatives addressing skills shortages in their national context, including labour migration admissions policies, education and training programmes, skills recognition procedures, and mobility partnerships with third countries. In sum, a total of 78 expert interviews were conducted

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across the nine countries (see Annex 2). This research at the national level resulted in nine detailed country-level reports, shedding light on the extent to which migration, education, and development (MED) policy objectives intersect in efforts to bridge skills gaps at the national level. Findings from the national reports were then analysed to identify cross-cutting themes and points of divergence.

To supplement insights at the national level, a desk review was conducted to map MED policies that shape skills shortages at the EU level, drawing on a wide range of academic and grey literature including Commission documents, project materials, evaluation and international reports. The goal of this mapping exercise was to identify and analyse the range of diverse EU policy instruments put in place to tackle skills shortages, reflecting on their different scope, aims, and impact as well as their specific implementation mechanisms, link to skills shortages, and degree of intentionality. The mapping also aimed to explore how mechanisms such as funding facilities, coordination platforms, or formal legislation have been differentially leveraged across policy areas.

To further enrich the analysis of policies at the EU level, 11 interviews were conducted with EU policymakers and skills experts across different policy domains and economic sectors (see Annex 1). Interview participants were selected to collect diverse insights across the three policy areas covered in this working paper (migration, education, and development) as well as the project's priority sectors (digital, care, and construction). In total, 20 stakeholders were interviewed, representing a range of EU institutions, industry associations, employers' organisations, trade unions, and more. Interviews were conducted online and followed a semi-structured format, with protocols tailored to leverage the unique insights that participants could offer based on their background and expertise. Broadly, the interviews aimed to explore past and current efforts to address skills shortages in the EU, uncover persistent gaps and challenges, and identify opportunities to strengthen collaboration and coordination among diverse stakeholders. Detailed notes were taken during each interview and later analysed to draw out common themes, recurring issues, and potential areas of opportunity.

3. Categorising Policy Responses to Shortages: The Current Landscape

The complex nature of skills shortages in Europe has required policy responses across policy domains. Migration, education, and development policies have been central to recent debates and strategies for addressing skills shortages in Europe. These interconnected policy domains play a critical role in ensuring that industries have access to the talent they need while fostering long-term, sustainable solutions. Migration policies can help fill labour gaps by attracting skilled workers from abroad, as well as facilitating the integration or regularisation of those in EU territory, ensuring that industries facing shortages have access to the necessary talent. Education policies, on the other hand, play a key role by equipping domestic workforces (alongside other workers and students in EU territory) with the skills needed in evolving job markets, aligning curricula with industry demands, and promoting lifelong learning. Meanwhile, development policies not only help strengthen economic and social structures in partner countries but can also support skills mobility

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opportunities to Europe enhancing skills training in partner countries, and improving recruitment and matching processes, while preventing brain drain and brain waste.

Beyond migration, education, and development, other policy domains play a significant role in addressing skills shortages. Labour market policies shape workforce participation through regulations on wages, working conditions, and employment rights, affecting the attractiveness of certain professions and countries. Economic policies, including taxation and investment incentives, influence business growth and job creation, impacting demand for skilled workers. Innovation and technology policies drive automation and digitalisation, reducing skill demands through increased efficiency, altering skill requirements, and creating new job profiles. Social policies, such as childcare, retirement age, and work-life balance initiatives, affect workforce participation, particularly among underrepresented groups. Additionally, regional and infrastructure policies shaping access to housing, transport, and training opportunities, lay the foundations and preconditions for tackling skills shortages.

Considering recent EU flagship initiatives—such as the Pact for Skills, the Talent Partnerships, and the emerging focus on the development-migration nexus—have brought a renewed emphasis on the powerful intersection of migration, education, and development policies, this report specifically focuses on MED policies. The report explores how they complement (or sometimes conflict with) each other. It identifies gaps, assesses potential trade-offs, and provides real-world examples of how these policies can be leveraged to address skills shortages. This analysis results in a mapping of potential policy solutions that can guide policymakers in tackling this critical issue.

3.1. Migration Policy Responses to Skills Shortages

According to World Bank analyses, even with increased migration and labour force participation from women and the elderly, high and upper middle-income countries will still lack a sufficient labour force to maintain a ratio of 2.5 workers per elder, while low and low- and middle-income countries are simultaneously facing a labour force surplus (Acosta et al., 2025). Countries such as Italy, Germany, Spain, France, and Poland would lack millions of people each (see Figure 1). In other words, while increasing participation in the labour market of other groups and up- and reskilling are important, migration is likely part of the solution to tackling the labour and skills shortages facing Europe. Yet, Europe is losing the global race for talent.

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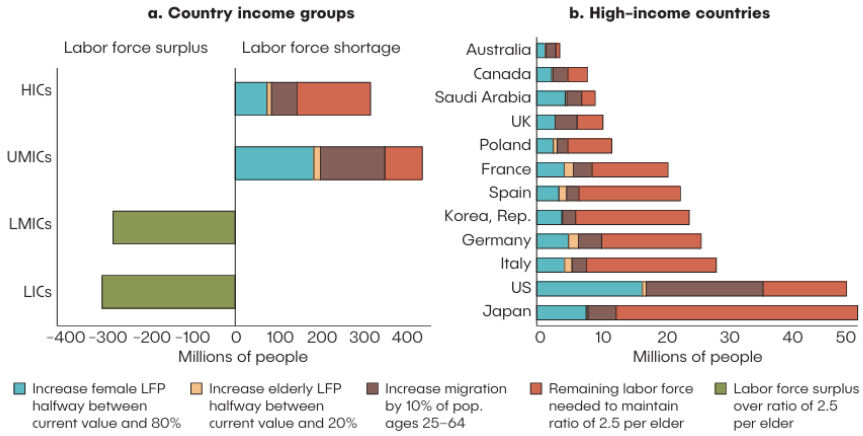
Figure 1. The labour force needed to maintain an inverse dependency ratio of 2.5 in HICs and UMICs cannot be met by expanding participation rates of women and elderly



Source: Reprint from World Bank report figure (Acosta et al., 2025) based on calculations from the United Nations Population Division medium variant projections and labour force participation (LPF) rates from the International Labour Organization.[1]

Labour migration and mobility have already been playing a pivotal role in tackling skills shortages, both now and in the past. According to the latest data, 11.2 million third country nationals (TCNs) were employed in the EU labour market in 2023 (Eurostat, 2024). While labour mobility could and – according to the World Bank estimates – should be a part of the solution, there are numerous obstacles that make this option less feasible. The current political context may make it a less feasible option in some Member States, while concerns about labour exploitation, brain drain, and the impact on countries of origin have sparked criticism. There are also questions about bottle necks in infrastructure, such as a lack of housing, to accommodate new migrant workers and the impact on social cohesion. This section identifies different policy options on how to leverage labour migration to address skills shortages and assesses their trade-offs.

[1] Note: HIC = high-income country, UMIC = upper-middle-income country, LMIC = lower-middle-income country, LIC = lower-income country. The figure reflects the number of labour force participants over age 25 needed to maintain a ratio of at least 2.5 per person aged 65 and above (approximately the current ratio observed in the US, Canada, and the UK) by 2050, assuming constant labour force participation.

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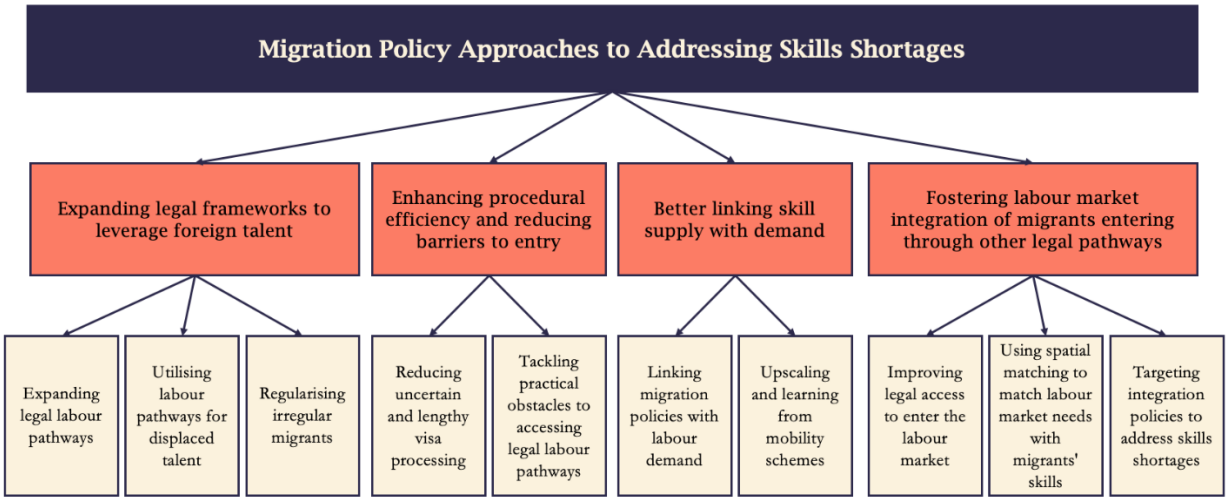
Figure 2. Typology of migration policy approaches to addressing skills shortages.



Source: Prepared by the authors.

3.1.1. Expanding legal frameworks to leverage foreign talent

One of the most direct ways to address skills shortages in the migration policy domain is through legal frameworks that allow foreign talent to work legally in shortage occupations. This includes attracting new foreign talent through legal labour pathways – either at the EU or national level, using labour pathways to bring in displaced talent, and regularising foreign talent that may be irregularly residing – and working – in Europe already.

Expanding legal labour frameworks at the EU and national level

Legal labour pathways are the cornerstone of labour mobility, but the current fragmented patchwork of legal labour pathways to Europe has many gaps and is incredibly complex to navigate with specific routes for different skill levels and labour sectors as well as complementary and parallel systems at the EU and national levels due to labour migration being a shared EU and Member State competence.

At the EU level, failed attempts to launch a general approach to labour migration[2], have resulted in a patchwork of EU Directives that provide distinct entry and residence options for different types

2 See the 'Proposal for a Council Act establishing the Convention on rules for the admission of third-country nationals to the Member States' (COM(97) 387 final, 30 July 1997) and the 'Proposal for a Council Directive on the conditions of entry and residence of third country nationals for the purpose of paid employment and self-employed economic activities' (COM (2001) 386 final, 11 July 2001).

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of non-EU workers (Peers, 2022). The EU Blue Card Directive targets highly skilled professionals, offering a streamlined path to work in Member States under certain salary thresholds (2021/1883). The Intra-Corporate Transferee Directive facilitates temporary transfers of managers, specialists, and trainees within multinational companies (2014/66). The Students and Researchers Directive enables international students and researchers to study and work in the EU with easier mobility provisions (2016/801). Furthermore, the Seasonal Work Directive provides temporary work permits for non-EU nationals in sectors like agriculture and tourism (2014/36), while the Single Permit Directive establishes a general framework for work and residence permits for non-EU workers but leaves significant discretion to Member States (2011/98 recasted 2024/1233). Especially low- and medium-skilled workers who do not fit within the scope of the seasonal work Directive fall through the cracks of this patchwork of Directives, while many shortage occupations do require low- and medium-skilled workers, such as the construction, elderly care, or hospitality sectors.

Adding to the complexity, EU Member States are allowed to set more favourable standards for each of these Directives and develop national schemes in parallel to the EU ones, resulting in a complex set of legal pathways that vary significantly across Member States. The fragmented nature of these approaches leads to inconsistencies in implementation, making it difficult for businesses and migrants to navigate the system efficiently. In parallel, Member States have developed their own national legal labour pathways to attract specific categories of workers. In a mapping from early 2024, the European Centre for Development Policy Management (ECDPM) identified almost 300 legal pathways that were active at the time, with great variation in the types of labour migration pathways that were available, the procedures and criteria for receiving work permits, and the annual number of migrant workers admitted through these pathways (Knoll, 2024-b). Most labour market pathways in the EU are tailored to highly skilled migrants, with opportunities for lower-skilled TCNs much more restrictive (Knoll, 2024-a:15). In the Netherlands, for example, the Knowledge Migration Scheme (*Kennismigrantenregeling*) allows highly skilled non-EU workers to obtain a fast-track residence permit to fill vacancies in sectors with talent shortages (internal GS4S country report, the Netherlands).

Similar to EU legal pathways, national legal labour pathways have predominantly focused on highly skilled occupations and reflect broader trends, such as the rise of Digital Nomad Visas[3] and Tech Visas (Knoll, 2024-a). More recently, though, and considering widespread shortages, there have been a few attempts to facilitate work for low and middle-skilled migrants as well. In Germany, for example, the Western Balkans Regulation has simplified access to the labour market for workers from this region, particularly in sectors facing labour shortages. The regulation allows Western Balkan workers to arrive in Germany with temporary work permits without imposing any qualification-related conditions. More recently, the Chance Card (or *Chancenkarte*) introduced in 2023 has aimed to attract workers from non-EU countries, especially those with the skills needed

[3] Digital nomad visas have been introduced in Cyprus, Czechia, Estonia, Germany, Greece, Hungary, Italy, Malta, Portugal, Spain, and Slovenia

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to fill vacancies in industries facing labour shortages such as hospitality, construction, healthcare, and manufacturing (internal GS4S country report, Germany).

Utilising labour pathways for displaced talent

In recent years, a handful of EU Member States have piloted labour pathways aimed at facilitating the mobility of displaced people in need of international protection to address labour shortages in Europe (Dorst et al., 2024). Encouraged by the European Commission and supported by AMIF funding,[4] countries like Belgium, Ireland, Italy, and Portugal have tested these programmes, while others, like Spain, France, and Slovakia, are exploring the potential for similar initiatives.[5] These pathways are seen as a potential win-win solution, offering refugees with in-demand skills the opportunity to fill gaps in sectors facing acute workforce shortages, while simultaneously alleviating pressure on asylum and resettlement systems and reducing brain waste (Fratzke et al., 2021).

However, despite the promise of these programmes, their impact has been limited thus far and scaling them up has proven challenging (Fratzke & Zanzuchi, 2024). While the number of beneficiaries remains low, the initiatives are resource-intensive, requiring policy adjustments, employer engagement, and civil-society support to facilitate refugees' access to work visas and ensure their successful integration. Furthermore, employer scepticism remains a significant hurdle, driven by concerns over uncertain timelines, complex processes, and costs, which limits their participation and hinders the potential for scaling these programmes (Dorst et al., 2024). Politically, these pathways also face resistance, as they intersect with broader migration and protection debates, adding another layer of complexity. As a result, while labour pathways for displaced talent may hold potential to address skills shortages, their impact has been limited so far, with scaling up and long-term sustainability remaining major hurdles.

Regularising irregular migrants active in the labour market

While often overlooked and highly politicised, the regularisation of irregular migrants who are already residing in the EU and possess the skills needed in the labour market may be another way to tackle skills shortages. While estimates vary, a recent study estimated there are 2.6-3.2 million irregular migrants in 12 of the European countries[6] (Hendow et al., 2024), many of whom are already in informal work. Instead of attracting new foreign talent, regularising those who are already in the country and often already working, albeit informally, may offer a win-win solution. Beyond being an opportunity to regularise existing labour relationships, it may also foster labour market mobility, a better match between skills and employment, and increase tax revenues and social security

4 The Recommendation on Legal Pathways to Protection in the EU, published along with the Pact, encouraged Member States to partner "with the private sector and employers to develop innovative international labour mobility schemes for PINOIP without prejudice to their protection rights". See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020H1364&from=FR

5 See AMIF funded STEP and DT4E 2.0 projects

6 This estimate covers irregular migrants in Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Spain, and the United Kingdom based on estimates from the Measuring Irregular Migration project.

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payments (Platform for International Cooperation on Undocumented Migrants [PICUM], 2022:18-19). For example, Operation Papyrus in Geneva, which regularised 1,663 adults, resulted in at least 5.2 million euros in cantonal social insurance contributions (PICUM, 2022:6). Spain's regularisation programme (*arraigo*) has facilitated the systematic and large-scale regularisation of irregular workers, granting residence permits to those who meet specific employment and residency requirements. These programmes have helped integrate migrants into the formal labour market, improving their economic contributions and social stability. However, regularisation remains a politically sensitive topic, requiring careful design to balance humanitarian considerations with labour market needs. The skills irregular migrants have may also not meet the local demand for skills.

3.1.2. Enhancing procedural efficiency and reducing barriers to entry

While legal pathways allowing third country nationals to move to Europe for work are a crucial first step in addressing skills shortages, their effective implementation remains a significant challenge. This section examines how legal pathways for TCNs are put into practice, identifying key obstacles to their uptake and accessibility. It explores how enhanced capacity-building and digital tools can streamline lengthy and uncertain visa processes, along with practical and innovative solutions to barriers such as limited awareness of legal pathways, financial constraints, and linguistic hurdles during the application process.

Reducing uncertain and lengthy visa processing times through enhancing labour migration management capacity

Uncertain and lengthy processing times of visas and administrative bottlenecks can limit uptake, deter employers, and cause delays for labour migration (Acosta et al., 2025). Data from Fragomen highlights that the timeline for obtaining work authorisation varies considerably across European countries. The median number of days, from case initiation to authorisation, ranges from as few as 30 to as many as 274 days; with Italy, Greece, Bulgaria, Portugal, Sweden, and Czechia showcasing the longest waiting times in descending order (Fragomen, 2025).[7] This aligns with the findings from an extensive mapping of legal labour pathways to Europe that found procedures would often take between two to eight months – and even longer if qualifications had to be recognised (Knoll, 2024-a:15). In Senegal, for example, just securing an appointment at the French or Spanish Embassy can take one to two years, due to limited capacity and intermediaries booking and then reselling all appointments (Alliance Solidaire des Français de l'étranger [ASFE], 2024; authors personal communication, February 2025). Lengthy and uncertain visa processing times make countries less attractive to foreign talent and are also included as one of seven dimensions in the OECD Indicators

[7] Based on the Fragomen "Work Ready Map – Europe" that reflects the number of calendar days from case initiation to the date when a foreign national will be authorised to work in the destination country. The typical work ready range reflects the average number of days by which 50% of the applicants are authorised to work. This means that 50% will get work authorisation even later.

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of Talent Attractiveness (ITA) (OECD, 2023)[8]. These long waiting times are often caused by a lack of staff capacity compounded by inefficient and bureaucratic procedures.

Enhancing migration management capacity can help ensure that skilled workers enter the labour market swiftly. This includes optimising application procedures, increasing the use of digital and online tools, and investing in sufficient staff and resources to handle applications efficiently. In Egypt, for example, the Integrated Migration Information Systems (IMIS III) project enhanced the capacity of government institutions to effectively manage labour migration. This was achieved by implementing a quality assurance system to validate skills testing and certification processes, and by strengthening national capabilities to respond to the demands of the international labour market (IOM Egypt, 2016). Yet, with labour shortages across the EU and the high cost associated with such investments, they may not be enough to sufficiently speed up procedures. Digitalisation, such as online case management systems and partially automated decision-making, could play a vital role in making visa procedures more efficient. Countries such as Estonia have successfully implemented e-government solutions that enable online visa applications, cutting down on administrative delays. Canada, for example, already automatically triages visa applications into different categories using a machine learning tool, with automatic processing of the most straightforward cases (Salgado & Beirens, 2023). AI could be further utilised to streamline background checks and document verification, reducing the burden on human staff while ensuring compliance with legal requirements. While digital tools may contribute to efficiency and generally require a one-off investment, they may also replicate bias in decision-making (as AI tools, for example, are trained on existing data). Sufficient human oversight could prevent such bias (Salgado & Beirens, 2023).

Tackling practical obstacles to accessing legal labour pathways

Access to legal labour pathways is often hindered by other practical obstacles, such as insufficient information and complex bureaucratic procedures. A large study, for example, found that it is difficult to obtain information on available legal pathways in some Member States, limiting their use (Knoll, 2024-a:15). To overcome this obstacle, some Member States have created websites to target prospective third-country workers and employers seeking foreign talent, some targeting specific skill levels, labour sectors, or third countries, while others take a more general approach by also targeting domestic workers (European Migration Network [EMN], 2025:10).

Such websites not only improve access to information on legal labour pathways, but also help address specific skills shortages. They do so by focusing on specific labour sectors and incorporating functionalities that facilitate the matching of employees with foreign talent - for

[8] To explore the Indicators of Talent Attractiveness, see: https://web-archive.oecd.org/temp/sections/talent-attractiveness/index.htm

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example, search tools for vacancies with specific language requirements, options for job seekers to upload their CVs, and consultation services (EMN, 2025).[9]

Examples include Ireland's 'Medical Consultant Recruitment Hub', which offers information for foreign healthcare workers, and France's 'Welcome to la French Tech' platform, which includes a virtual helpdesk to support tech talent moving to France (Welcome to France, 2025). However, the proliferation of such platforms – often multiple per Member State, each targeting different sectors, skills levels, or origin countries – can create confusion and reduce accessibility. The EU Talent Pool could serve as a centralised platforms to consolidate and streamline access to information on legal labour pathways platforms (see Box 1).

Even when information on legal labour pathways is accessible, other practical obstacles remain. Bureaucratic procedures are consistently cited as a major obstacle to attracting foreign talent (Knoll, 2024-a; EMN, 2025). Belgium, Germany, Italy, Latvia, Slovenia, and Slovakia have all identified complex administrative procedures as barriers to attracting foreign workers (EMN, 2025). In the Netherlands, for example, applying for a work visa can take up to 6 months (Migration Partnership Facility [MPF], 2024). Applicants must first organise their visa application through a Dutch embassy or consulate before departure and separately apply for a work permit. The work permit application requires an "EH3 level eHerkenning account" - the application for which separately requires an "Uittreksel Kamer van Koophandel," the submission of further personal details as well as the details of an "authorised representative" (UWV, 2025; KPN, 2025). Further complications arise due to inefficiencies in document collection and review, including birth certificates, diplomas, and police checks (MPF, 2024).

Language barriers also present a challenge, with visa applications often only available in one language. For example, data on international students shows that 65 per cent experience difficulties due to language inaccessibility during visa and residence permit applications (WorldwideEduConnect, 2024). Moreover, some EU countries also require work visa applications to be completed prior to arrival, further complicating the process. While Austria, Estonia, Germany and Portugal offer exceptions for certain categories of third-country nationals (Knoll, 2024-a:11). The challenge is even greater when in-person applications are required but no embassy or consulate is available in an applicant's country of residence. For example, Nigerian candidates participating in the Digital Explorers project – a programme recruiting ICT professionals for training and employment in the Baltics –first had to travel to South Africa to apply for a Lithuanian visa, return to Nigeria to collect it, and then travel to Lithuania for their six-month internship (Hooper & Slootjes, 2025:22).

[9] See EMN report for a more detailed overview of the different functionalities of these types of websites, which countries sport which functionality, and examples of such websites.

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Box 1 – The EU Talent Pool

The EU Talent Pool, first proposed by the European Commission in 2023 and currently under development, is set to become the EU's first job-matching platform connecting third-country nationals (TCNs) with employers across the Union. Building on the existing European Employment Services (EURES) system, it will shift the focus from intra-EU mobility to international recruitment, aiming to streamline hiring processes and help address persistent labour and skills shortages across Member States (European Commission, 2023-f).

The platform will allow third-country jobseekers to register, upload CVs and browse vacancies, while employers will be able to post job offers-subject to prior approval by National Contact Points (NCPs) in each Member State. These NCPs will play a central role by linking the platform with national systems, sharing information on labour shortages, and facilitating the transfer of job offers (de Groot & Faucheux, 2024). One of the platform's key features will be an automatic matching tool that suggests relevant jobseeker profiles to employers and appropriate vacancies to jobseekers, based on their qualifications, work experience, and skills.

The Talent Pool seeks to make legal migration pathways more accessible to jobseekers from third countries and more responsive to labour market needs of employers in EU Member States. The platform combines different types of policy measures identified in this working paper, including centralising fragmented information on legal labour pathways and qualification recognition and better linking labour supply with demand (European Commission, 2023-f).

The Talent Pool aims to address skills shortages by requiring that job vacancies listed on the platform align with a new EU-wide shortage occupations list. Member States can adapt this list by adding or removing shortage occupations in their own country, thereby better matching the vacancies listed on the platform with their local labour market needs. While how this list is created remains under discussion, it intends to support faster, more efficient recruitment for shortage occupations (de Groot & Faucheux, 2024).

The initiative has gained broad support from employers, policy bodies, and institutions like the OECD, which views the Talent Pool as a cost-effective tool with high potential to improve labour migration outcomes (OECD, 2022). Supporters underline its role in connecting TCNs of all skill levels to EU jobs (Business Europe, 2025). However, concerns have also been raised by trade unions and civil society, who warn of risks such as inadequate worker protections, especially for workers in high-risk sectors like construction and agriculture (European Trade Union Confederation [ETUC], 2023; 2024) and limited inclusion of migrants already residing in the EU (ETUC, 2024). SOLIDAR similarly critiques the narrow sectoral focus, warning it could "channel migrants into essential yet often undesirable jobs" and perpetuate exploitative conditions (SOLIDAR, 2024). Meanwhile, the World Employment Confederation cautions against ethical risks posed by the automated matching system, noting it could unfairly compete with private

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services and suffer from bias if mismanaged (WEC-Europe, 2024). These groups call for a more rights-based approach and a clearer framework for migrant worker protections.

Initial implementation steps included the launch of a pilot helping Ukrainian refugees find employment in several EU countries and the European Parliament's approval of draft rules in March 2025. The Commission aims to launch the Talent Pool by 2028, with a policy review expected by 2031.

In sum, the EU Talent Pool could become a pivotal tool in addressing labour shortages and enhancing the EU's global competitiveness by providing a centralised, demand-led platform that connects third-country nationals of all skill levels with European employers. However, it can only fulfil this role if it incorporates strong labour rights protections, includes migrants already residing within the EU, and offers sufficient flexibility for national labour market needs (ETUC, 2024; SOLIDAR, 2024). To make the most of this tool, the EU should streamline migration procedures—such as through a European job-search visa or standardised application forms—and ensure the meaningful involvement of employers, trade unions, and private employment services in its governance (OECD, 2022; WEC-Europe, 2024).

The typology of policy solutions in this working paper provides an opportunity to think through potential functionalities which could enhance the usefulness of the Talent Pool. For example, the EU Talent Pool could include a searchable overview of all legal labour pathways with clear information on eligibility and application procedures provided in multiple languages and with links to online application portals. Beyond creating an easy-to-use platform, the tool should also be disseminated widely to encourage use of the platform. Finally, to properly use the tool to address skills shortages, shortage occupation lists will have to be updated in a timely fashion and should address all skills shortages, not only highly skilled.

3.1.3. Better linking supply with demand

Skills shortages vary across skill levels, labour sectors, and regions, requiring targeted policies to better align foreign talent with demand. This section examines how migration policies have been adjusted and mobility schemes leveraged to address specific shortages more effectively.

Linking migration policies with labour demand

To ensure visa schemes and legal pathways better tackle skills shortages, migration policies should be better linked to labour market demands. A large comparative study from 2024 found that most EU Member States had established a link between labour market demands and migration policies, except for Bulgaria, Cyprus, the Netherlands, and Portugal (Knoll, 2024-a). Interestingly, the Netherlands had the highest job vacancy rate during this period (Eurostat, 2025). How migration

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policies are linked with labour demand varies both in terms of how labour demand is identified and, subsequently, how labour migration is facilitated to target specific labour demands.

In the EU, this link is most commonly established through shortage occupation lists that provide a relaxation of the application requirements for work permits and/or provide fast-track procedures (Knoll, 2024-a). How shortage occupation lists are compiled and how labour migration is facilitated differs considerably across Member States. Germany's Federal Employment Agency, for example, compiles its shortage occupation list based on six key indicators, including unemployment rates, vacancy durations, and salary trends, ensuring a data-driven approach (Federal Employment Agency, 2024). In contrast, Belgium's Walloon region prioritises annual updates to keep pace with economic priorities (Fragomen, 2024). As shortage occupation lists determine which skills shortages get prioritised, their methodologies matter and are an important tool in tackling skills shortages (Butchley, 2024).

A common way to subsequently facilitate labour migration for foreign workers in shortage occupations is to exempt applicants from a labour market test.[10] Labour market tests only allow migrants workers to be admitted if employers have, without success, searched for a candidate among those who already have legal access to the labour market. Less commonly, countries use lower salary thresholds, exemptions or applications of quotas, fast-track procedures, or specific visas for shortage occupations (Knoll, 2024-a).[11]

Labour mobility schemes for third country nationals

Beyond adjusting migration policies to facilitate labour migration for shortage occupations, there have also been more specific efforts to match migration to labour needs, for example through the use of mobility schemes, such as the EU Talent Partnerships (see Box 6). While results in terms of number of labour migrants that moved are limited and programmes are costly, these programmes may be useful in identifying bottle necks and informing policy change that could facilitate labour migration more generally (Hooper and Slootjes, 2025).

Broadly defined, labour mobility schemes offer participants the opportunity to relocate (temporarily) to another country for a work placement or training scheme (Hooper and Slootjes, 2025). Instead of creating new pathways, these schemes typically utilise existing work or study visas. Additionally, while some mobility schemes aim to fill current vacancies in shortage sectors, others focus on expanding the talent pool by providing participants with new skills. The diversity inherent in labour mobility schemes is evidenced by the variety of aims they seek to achieve: from offering short trips (sometimes without a visa) to time-limited internships, circular migration, or

[10] In 2024, Austria, Belgium, Croatia, Finland, France, Ireland, Lithuania, Luxembourg, Malta, Poland, Slovakia, and Slovenia all had labour market test exemptions for specific occupations (from shortage, bottleneck, specific, or critical skills occupations).
[11] In 2024, Germany, Ireland, and Latvia used lower salary thresholds, Estonia used quota exemptions while Italy and Romania applied quotas, Austria used fast-track procedures, and Hungary and Sweden had specific visa categories for shortages occupations.

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long-term opportunities, and tailored to specific skill needs, such as skills development, filling job vacancies, or a combination of both.[12]

While labour shortages in both countries of destination and origin can influence the design of mobility schemes, it is often geopolitical considerations that decide on the selection of partner countries. The EU Talent Partnerships, for instance, actively prioritise third countries cooperating with the EU on migration management and returns, as well as trade (European Commission, 2022). However, since many recent mobility schemes have been driven more by individual Member States[13], emphasising the added value of an EU mobility approach has proven difficult – especially given the pre-established bilateral relations between many Member States and third countries. Moreover, if the primary goal for this scheme was to address skills shortages in the EU, the Commission would likely have selected partner countries with already established migration corridors and large talent pools in high-demand sectors, such as care and ICT (de Lange, 2024).

The number of individuals participating in mobility schemes remains relatively low (typically moving fewer than 150 people), particularly when compared to the total number of employment permits issued or the movement of people through other mobility arrangements, such as preferential trade agreements (Lavenex et al., 2023). Furthermore, pilot programmes have often been unable to deliver the required results within a short time frame, encountering high start-up costs that hamper coordination efforts between stakeholders at different levels. Moreover, given the largely 'unproven' nature of these schemes and unpredictable nature of visa wait times and relocation efforts, employers with time-sensitive vacancies have been weary. Moreover, schemes focused on upskilling must be better aligned with global labour market needs and produce internationally recognised accreditation. In terms of the Global Skills Partnerships (GSPs) approach, schemes must make sure that training is transferable to both the origin and the destination context – something that may be achieved through closer collaboration with employers and the local labour market needs. As such, there remain many challenges, not least around understanding the comparative advantages and trade-offs of different mobility scheme designs in addressing skills shortages compared to alternative policy tools.

3.1.4. Fostering labour market integration of migrants entering through other legal pathways

Labour migrants only make up 20 per cent of all migration to OECD countries (OECD, 2024-a). However, other migrant groups, such as refugees and family migrants, also contribute to addressing skills shortages. Despite this, non-EU citizens in the EU often face lower labour force participation rates and higher unemployment rates than nationals and EU citizens (Eurostat, 2024).

[12] See for a detailed analysis and typology of mobility schemes Hooper, K., Slootjes, J. (2025). What role can mobility schemes play in addressing skills shortages in Europe? Global Strategy for Skills, Migration and Development (GS4S). https://doi.org/10.5281/zenodo.14959232.
[13] See, for example, Germany's *Triple Win* project or the joint Nigeria-UK healthcare agreements.

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This section explores how strengthening migrant integration policies could boost employment rates among migrants and refugees already in Europe, helping to alleviate skills shortages by better utilising—and potentially expanding—available human capital, focusing specifically on expanding legal access to entering the labour market and facilitating labour market integration – especially in skills shortage areas – through spatial matching and more targeted labour market integration policies.

Improving legal access to enter the labour market

The path to labour market integration begins with the legal right to work. Asylum applicants are initially barred from accessing the labour market, which can lead to skill waste deterioration. The new EU Pact on Migration and Asylum fosters labour market integration by ensuring that asylum applicants can enter employment more quickly. It requires Member States to grant labour market access within six months of submitting an application (Directive 2024/1346, art. 17), reducing the previous nine-month limit (Directive 2013/33/EU, art. 15). This is an upper limit, meaning Member States can allow earlier access.

Italy, for example, permits asylum applicants to work after 60 days of lodging their application (Art 22(1) Reception Decree). However, in practice, bureaucratic delays – such as difficulties in obtaining a residence permit – can hinder access (Asylum Information Database, 2025). Germany provides another example: asylum applicants and individuals with a *Duldung* (exceptional leave to remain) status can enter the labour market after three months, provided they receive permission from the Foreigners Registration Office (Arbeitsagentur, 2025).

This approach is relatively easy to implement and benefits all stakeholders. For asylum applicants, early access to employment can improve well-being, maintain and develop skills, and facilitate integration. For host societies, it can help address labour and skills shortages, boost tax revenues and boost social cohesion. However, while legal access to the labour market is beneficial, it is not a silver bullet for addressing skills shortages. Asylum applicants often lack the required language or professional skills, while others may face health challenges that prevent them from working. Additionally, various practical barriers – from administrative hurdles to discrimination – can further complicate their entry into the labour market.

Using spatial matching to match local labour market needs with migrants' skills

Even when migrants have legal access to the labour market, they often face multiple barriers to employment and contributing to addressing skills shortages. One key challenge is spatial mismatch – when migrants' skills or profiles do not align with regional labour market needs. Spatial matching offers a data-driven solution by aligning migrant characteristics with the socio-economic profiles of host communities to optimise labour market outcomes. A notable example is GeoMatch, developed by the Immigration Policy Lab (IPL) at Stanford University and ETH Zurich. Using AI-driven recommendations, GeoMatch suggests optimal resettlement locations for refugees and migrants based on historical data and individual profiles (Hotard, 2025). Simulations in the US and Switzerland suggest that GeoMatch could improve refugees' employment chances by 41 per cent

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and 73 per cent respectively (Immigration Policy Lab, n.d.). However, while these gains are promising, ethical concerns remain, particularly regarding the limited role of refugees' preferences in resettlement, which is crucial for their well-being and long-term integration. Alternative models, such as Pairity's Re:Match project, does match based on refugee preferences and municipal services and capacity, but focuses less on labour market outcomes (Smith & Ugolini, 2023).

Targeting integration policies to address skills shortages

Migrant integration policies are often overlooked as a tool to address skills shortages, even though they already play a crucial role in helping migrants and refugees access the labour market more effectively and, in some cases, tackle skills shortages. The EU Action Plan on Integration and Inclusion 2021-2027, for example, does not mention or recognise the role of integration policies in addressing skills shortages (COM/2020/758)[14]. Many migrants possess valuable skills, but barriers such as language proficiency, qualifications recognition, limited social networks, and discrimination on the labour market prevent them from securing jobs in their fields (Pisarevskaya and Webb, 2022; Fasani, 2024). Well-designed integration policies—such as targeted language training, streamlined credential recognition, and job placement programmes—can bridge this gap by equipping migrants with the tools needed to succeed.

While integration policies are often overlooked as a tool to tackle skills shortages, there are increasingly more examples where integration policies and programmes are adapted to address local skills shortages. Sweden, for example, has implemented the Fast Track programme which matches skilled migrants with shortage occupations while providing qualification validation in migrants' native languages, profession-specific Swedish language training, and tailored support from mentors and language tutors (Westphal & Gustafsson, 2016). Results have been encouraging – 90 per cent of participants in the research pilot secured jobs by the end of the project. Similarly, municipalities in Denmark have achieved significant employment gains through matching refugees to jobs with local labour shortages as part of the Industry Packages policy (Foged, Hasager & Peri 2022). Refugees were able to choose from a select range of potential occupations and sectors with labour shortages – generally low-wage and manual – after which they were matched with employers that offered both targeted training – which could last from a few months up to a year – and job opportunities.

Other examples are Dual Vocational Training Systems such as the "Kombimodell 1+3" pilot project in Coburg which extends the typical vocational training duration by one year to provide technical foundations and German language lessons for refugees in sought-after sectors and which has become a source of skilled workers (IHK Coburg, 2025). Since September 2016, nine cohorts of 15 to 25 young migrants have been enrolled annually in a unique cooperation between the Chamber of Industry and Commerce (IHK) in Coburg, private companies, and the regional vocational training school. All participants have official training contracts and are compensated from the start with

[14] The EU Action Plan on Integration and Inclusion 2021-2027, for example, does not reference the role of integration policies in addressing skill and labour shortages in Europe. See: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0758

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the same allowances as other vocational trainees, despite the training being extended by one year. Between 2016 and 2021, 133 participants were enrolled for training in metal and logistics professions (Neue Presse, 2021). Following the success of this pilot project, similar initiatives have been adopted in other regions including in Oldenburg and Munich. In 2023, 90 per cent of participants in Oldenburg successfully completed their training and found employment (IHK Oldenburg, n.d.). The success of this training model has resulted in interest growing elsewhere with plans to expand training opportunities in other occupations facing skills shortages. Another example is the Magdas Hotel project in Austria which addresses skills shortages in the hospitality sector and promotes refugee integration through providing both training and employment in a hotel in Vienna, while also fostering social cohesion through bringing together people from different backgrounds (European Commission, n.d.-a).

These initiatives showcase innovative ways to align integration policies with efforts to address skills shortages. A key advantage of these approaches is their ability to tackle multiple objectives simultaneously: they promote the labour market integration and well-being of migrants and refugees, reduce welfare dependence, increase tax contributions, and help fill skills gaps. Additionally, they can be cost-effective when well-designed. The Fast Track Programme's training is for example provided and financed by employers and the Magdas Hotel initiative quickly became financially self-sustaining, relying on paying customers and private donations. However, the scale of these programmes remains limited. To fully leverage integration policies as a means to address skills shortages, these initiatives must be upscaled and Member States should explore ways to tailor their integration courses to better support labour market entry, particularly in sectors facing shortages.

3.2. Education Policy Responses to Skills Shortages

Education and training policies have long played a fundamental role within the broader policy landscape aiming to tackle skills shortages and equip workers with the competences they need to thrive in a rapidly changing world. Investments in education and training systems, efforts to foster enhanced skills recognition across borders, and targeted upskilling and reskilling initiatives are among the many strategic policy interventions in the fields of education and accreditation that seek to bridge skills gaps and align the workforce with the evolving demands of the labour market.

Skills validation and development are central components of several recent flagship initiatives at the EU level (see Box 2), including the European Skills Agenda and the Pact for Skills. In March 2025, the Commission presented the new Union of Skills strategy, an overarching plan to enhance high-quality education and promote skills development that proposes new skills targets by 2030 (European Commission, 2025-b). At the national level, policymakers in EU Member States and beyond have increasingly been implementing national skills strategies focused on reforming educational curricula and enhancing vocational training systems to promote employability amidst steadily changing workforce demands (OECD, 2024-b). This growing landscape of strategic interventions at the EU and national levels offers a valuable opportunity for close collaboration

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with industry partners, who play a vital role in efforts to modernise education and training systems to meet evolving labour market demands.

Box 2 – Flagship skills initiatives in the European Union

While EU Member States remain responsible for the organisation of their education and training systems, the EU plays an important role in coordinating and supporting national governments with quality enhancement through funding mechanisms and policy dialogue with Member States. Skills validation and development are key components of several large-scale, umbrella initiatives introduced at the EU level in recent years. One such initiative is the European Skills Agenda, a five-year plan launched in 2020 that seeks to improve the quality and relevance of skills across Europe by strengthening access to education, training, and lifelong learning (European Commission, n.d.-j). This comprehensive strategy aims to enhance the adaptability of workers to new technologies and evolving industry needs across Europe and align educational systems and employment strategies to meet the demands of the ongoing digital and green transitions.

One of the flagship actions of the European Skills Agenda is the Pact for Skills, which was launched in 2020 as a call for joint commitments from businesses, governments, and other stakeholders to address the growing skills gap. The Pact for Skills aims to support both public and private organisations with upskilling and reskilling efforts by providing access to vital knowledge and support networks (European Commission, n.d.-k). It offers three dedicated services to its members: the Networking Hub, the Knowledge Hub, and the Guidance Hub. These offerings are designed to foster vital dialogue among members of the Pact, which include governmental authorities, private companies, social partners, sectoral organisations, educational institutions, and more.

The European Year of Skills, declared in 2023, was another cornerstone initiative within the EU's broader strategy to address skills shortages and boost competitiveness (European Union, n.d.-a). This initiative focused on raising awareness about the importance of skills development and encouraging EU citizens to enhance their competences through training and education. Through various campaigns, events, and activities, the Year of Skills aimed to close skills gaps across the EU by promoting investment in training and upskilling, facilitating the recognition of qualifications from third countries, and more.

Most recently, in March 2025, the Commission presented the Union of Skills strategy, a plan aimed at strengthening education and training across Europe and boost EU competitiveness. (European Commission, 2025-b). The Union of Skills seeks to build upon past efforts and existing frameworks to strengthen collaboration among Member States, employers, and education and training providers, empowering individuals across Europe with the skills they need to thrive. The Union of Skills also emphasises the need for strong governance and coordination to deliver on

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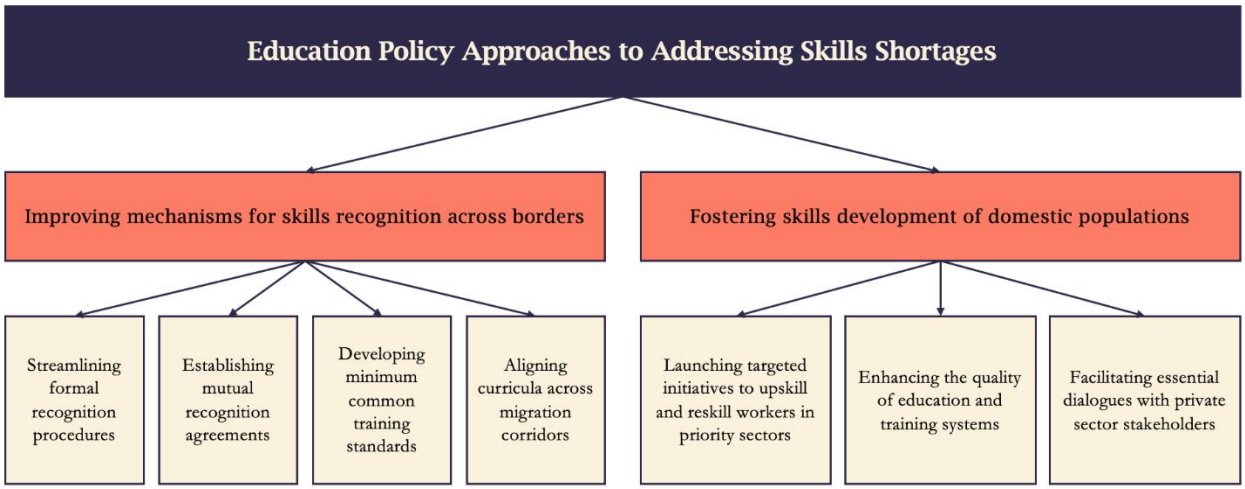
its goals and plans to leverage a European Skills Intelligence Observatory and a European Skills High-Level Board to achieve this.

Despite growing efforts to bridge skills gaps through education and training policies, challenges persist in effectively applying these measures to combat shortages. One key obstacle is the fundamental difficulty in aligning educational systems with the rapidly evolving needs of industries in the private sector. Skills shortages are a moving target, and workplaces are transforming at an increasing pace due to advancements in the use of digital technologies, artificial intelligence, and automation. Systemic educational reforms take time and require substantial resources, which often makes them slow to adapt to fast-moving shifts in labour market demands. Another potential drawback is the risk that investments in skills may inadvertently perpetuate inequalities by failing to reach vulnerable or marginalised groups or neglecting the needs of workers in certain sectors, particularly those characterised by high levels of informality (Interview with Cedefop, 2024). Despite these hurdles, skills development initiatives – when implemented effectively – play a crucial role in closing skills gaps, improving workforce productivity, and strengthening overall economic resilience (World Bank, n.d.). Efforts to promote skills development and enhance skills recognition procedures can yield lasting positive outcomes, particularly when public and private stakeholders collaborate seamlessly throughout the end-to-end process, from planning and implementation to evaluation of strategic projects.

The following section examines how policy instruments in the field of education have been strategically leveraged to address skills shortages, delving into specific examples at the national and European level related to skills validation (section 3.2.1) and skills development (section 3.2.2) of domestic populations and foreign-trained workers. The analysis seeks to provide a comprehensive understanding of the role these policy tools play in tackling skills gaps, exploring both their advantages and limitations in achieving their intended outcomes.

Figure 3. Typology of education policy approaches to addressing skills shortages.



Source: Prepared by the authors.

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3.2.1. Improving mechanisms for skills recognition across borders

Efforts to coordinate the recognition of skills and qualifications obtained abroad are some of the most crucial policy mechanisms in the context of addressing skills shortages, yet they remain some of the most challenging to implement. Recognition procedures vary significantly across countries, depending on the implementing authority, the labour market sector, the issuing entity, the nature of the qualification (academic versus non-academic or professional), and whether services will be provided temporarily or permanently (Your Europe, n.d.). A range of diverse initiatives at the regional, national, and international levels aim to streamline the recognition of foreign credentials, allowing states to more effectively integrate skilled workers from abroad into domestic labour markets and tap into talent pools that already possess the skills needed to fill shortages. Not only do these mechanisms facilitate the integration of skilled migrants into national labour markets, but they also enhance how national qualifications are perceived abroad, yielding far-reaching benefits for states and their citizens alike. The following sections explore initiatives that seek to improve skills recognition mechanisms across borders, including reforms to formal recognition procedures, bilateral and multilateral recognition agreements, and efforts to align training curricula across migration corridors.

Streamlining formal recognition procedures

The formal validation of foreign qualifications is a fundamental component of efforts to address skills shortages through skilled labour mobility, as it enables foreign-trained workers to use their professional qualifications in domestic labour markets. However, recognition procedures, particularly in the case of professional qualifications, have historically been highly bureaucratic, complicated, and costly, resulting in an abundance of policy measures designed to facilitate this process – with mixed success.

In addition to drawing a crucial distinction between academic and professional qualifications, it is essential to differentiate between recognition for regulated versus non-regulated professions. Regulated professions, often falling into the health, safety, and social services sectors, require individuals to obtain a license or certification from a national regulatory authority before they can practise (ENIC-NARIC, 2025). In contrast, for non-regulated professions, employment requirements are left entirely up to employers (ENIC-NARIC, 2025). The difference in regulatory oversight between these two categories of occupations has implications for the types of policy mechanisms that have the most impact when it comes to streamlining foreign credential recognition. Furthermore, there are national differences in the degree to which qualifications are regulated more broadly: in Germany, for instance, qualification recognition is crucial for securing a job in many sectors, whereas it is far less significant in countries with less regulation (Koumenta & Pagliero, 2016).

Despite differences in professional qualification recognition processes across Europe, individuals face many similar challenges across the board: a lack of electronic procedures, excessive documentation requirements, and months-long processing times (European Court of Auditors,

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2024). To date, a patchwork of recognition systems and tools exists in practice, with a wide range of initiatives at the EU level designed to supplement national frameworks and facilitate the recognition of academic and professional qualifications obtained within the EU and in third countries (see Box 3). This landscape of overlapping frameworks creates confusion, implementation gaps, and uncertainty about how these systems integrate. On the academic side, an evaluation report on progress towards implementation of the 2018 Council Recommendation on promoting automatic mutual recognition of education and training qualifications found that stakeholders, especially in higher education, reported a lack of clarity as to how different developments around recognition fit together (European Commission, 2023-a). Despite the wide range of systems and tools available at the EU level to support the recognition of qualifications on the professional side, the EU recognition systems are sparsely used: a 2024 audit from the European Court of Auditors estimated that they are utilised in only six per cent of EU mobility cases (European Court of Auditors, 2024).

Thus, efforts by national governments to streamline the formal recognition of foreign qualifications play a pivotal role in enabling labour mobility to close skills gaps in domestic labour markets. These efforts can take several different forms, from shifting to a fully digital process to easing the requirements to prove equivalence of qualifications acquired abroad. A prime example of such reforms in recent years can be seen in Germany, where the easing of qualification requirements for credentials acquired abroad represents one of the most important recent shifts in the country's immigration policy (internal GS4S country report, Germany). The 2023 reform of the Skilled Immigration Act included key provisions making it easier for foreign qualifications of skilled workers to be recognised in Germany and eliminating the existing burdensome skills recognition procedure (Bundesministerium der Justiz, 2023). The Nursing Studies Strengthening Act offers another recent example from Germany: this legislation, in force since 2023, aims to simplify the recognition of foreign degrees to mitigate shortages in the profession (Bundesministerium für Gesundheit, 2023). Some specific provisions of the legislation include the possibility of accepting documents in English or without translations and the possibility of waiving an equivalence assessment, allowing applicants to directly proceed to the knowledge test or adaption training (Bundesministerium für Bildung und Forschung, 2024). These reforms have shown strong potential, targeting a process that has historically been challenging in Germany and promoting the integration of skilled professionals into the domestic labour market.

In recent years, Italy has also implemented national reforms to simplify credential recognition, particularly in the healthcare sector. Article 13 of Legislative Decree 18/2020 eased the requirements for professional qualifications of health-related professionals during the COVID-19 pandemic, allowing healthcare workers to bypass the more complex recognition procedures that were previously in place (Gazzetta Ufficiale, 2020). This provision was initially set to last until December 2021 but has been extended several times and is now slated to remain in effect until December 2027. Beyond the healthcare sector, the Decreto Cutro (Decree-Law No. 20/2023) amends Article 23 of the Unified Immigration Act, facilitating access to the Italian labour market for third-country nationals who have completed specialised training programmes in their home countries (internal GS4S country report, Italy). These reforms reflect Italy's ongoing efforts to

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streamline the recognition of education and training conducted abroad and improve labour market access, particularly in response to skills shortages in the healthcare sector.

In addition to efforts at the national level, EU frameworks and policy tools continue to play an important role in facilitating the formal recognition of academic and professional foreign credentials, both within the EU and with third countries (see Box 3 for an overview of foundational EU initiatives). However, EU-level efforts remain limited in scope, and gaps persist in practice. For example, more well-established processes exist for credential portability in the context of intra-EU mobility, but challenges remain in recognising the qualifications of third-country nationals. Moreover, despite a broad array of policy tools designed to facilitate the recognition of academic qualifications, there is a notable gap in practice when it comes to effective recognition mechanisms for non-academic credentials. For instance, country-level interviews in Estonia revealed that it can be unclear how non-academic qualifications are evaluated through the ENIC/NARIC network (see Box 3) and suggested that the recognition process is likely left to employers in practice (internal GS4S country report, Estonia). Ultimately, the scope and effectiveness of EU efforts are limited, underscoring the need for robust national strategies, which are better positioned to address specific local challenges, complement actions taken at the EU level, and fill the gaps left by international frameworks.

Even when systems exist to facilitate skills recognition, their effectiveness can be limited in practice due to a lack of trust among employers. Country-level interviews conducted in the Netherlands, for example, highlighted that despite national efforts to certify or prove equivalence for foreign qualifications, discretion is left to employers; thus, it may be difficult to convince an employer to hire a third country national without a Dutch degree in practice (internal GS4S country report, the Netherlands). This underscores the need to build trust in formal recognition systems among employers to enhance their effectiveness in practice. It also demonstrates the inherent challenges with relying on the formal recognition of foreign qualifications and raises questions about the merits of moving towards a 'skills-first' approach to hiring: one that is focused more on assessing competences than trying to recognise formal qualifications, particularly in the context of non-regulated professions.

Box 3 – Overview of key EU policies on qualification recognition
To understand the landscape of skills recognition in the EU, it is essential to examine the foundational agreements, qualification frameworks, and classification systems that have been established to facilitate this process across Europe. The importance of facilitating the recognition of qualifications has consistently been highlighted in the context of large-scale EU initiatives on skills, such as the European Year of Skills and the recent Union of Skills. Various policy instruments have been introduced over the past few decades to improve the portability of workers' qualifications across borders and facilitate labour market integration, both within the EU and beyond.

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In the field of higher education, the Lisbon Recognition Convention, adopted in 1997, is the main legal instrument on the recognition of qualifications in Europe (Council of Europe, 2025). In 1999, the Bologna Process launched as an intergovernmental reform process among European countries seeking to bring more coherence to higher education systems across the continent (European Commission, 2022). This process later established the European Higher Education Area (EHEA), in which all participating countries ensure the mutual recognition of qualifications and learning periods abroad completed at other universities. More recently, the Council Recommendation on promoting automatic mutual recognition of qualifications and learning periods abroad was adopted in in November 2018: building upon progress made through the Bologna Process and the Lisbon Recognition Convention, the Recommendation urged Member States to achieve automatic mutual recognition of higher education and training qualifications by 2025 (European Union, 2018; European Commission, 2023-a).

The 2018 Council Recommendation also encouraged further use of existing tools to aid in the recognition of qualifications and the outcomes of study in a foreign country, some of which extend beyond higher education to promote recognition of vocational education and training qualifications. One of the most important among these is the European Qualifications Framework (EQF), a common reference framework with eight levels based on learning outcomes that serves as a translation tool between different national qualifications frameworks and facilitates the recognition of academic and vocational qualifications (Europass, 2025). Another important tool is the European Credit Transfer and Accumulation System (ECTS), a standardised system of the EHEA that enables the recognition and transfer of academic credits between higher education institutions across Europe (European Commission, n.d.-b). The European Skills, Competences, Qualifications and Occupations (ESCO) classification system also facilitates skills recognition by categorising skills, competences, and qualifications that are relevant for the EU labour market (European Commission, 2024-a). On the implementation side, the ENIC/NARIC network is a vital system of national centres set up to directly support institutions and citizens with the recognition of academic qualifications in Europe and beyond (ENIC-NARIC, 2025).

The Professional Qualifications Directive (2005/36/EC) seeks to streamline the recognition process for professionals moving across borders within Europe (European Union, 2005). Alongside the various frameworks and agreements that support qualification recognition within Europe, the Commission Recommendation 2023/7700 of 15 November 2023 provides guidelines to simplify and expedite the recognition of competences and qualifications of third-country nationals by EU Member States (European Commission, 2023-b). These efforts, among many others, contribute to the EU's broader skills strategy, aimed at creating a more integrated and competitive labour market where workers' qualifications and competences are recognised effectively, regardless of where they were obtained.

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Establishing mutual recognition agreements (MRAs)

Structural reforms to streamline formal recognition procedures play an important role in facilitating cross-border skills recognition, but significant challenges persist due to differing qualification standards across countries and regions. Disparities in educational systems, competency levels, and qualifications frameworks across countries present fundamental barriers to cross-border recognition processes and the integration of skilled professionals with foreign qualifications into domestic labour markets (Cedefop, 2017).

To address these challenges, several countries and regions have established bilateral or multilateral agreements for the mutual recognition of professional or academic qualifications. These mutual recognition agreements (MRAs) between regulatory authorities of two or more countries are another key mechanism to support the recognition of specific qualifications across borders and facilitate the mobility of skilled workers. For instance, Switzerland has used bilateral agreements to facilitate the mutual recognition of specific qualifications with Germany, Quebec, and Liechtenstein (internal GS4S country report, Switzerland). For a multilateral example, the Benelux (Belgium, Netherlands, and Luxembourg) and Baltic (Estonia, Latvia, and Lithuania) countries signed an agreement for the automatic recognition of diplomas in September 2021 (Benelux, 2021). Similarly, the Agreement on Cooperation in the Western Balkans in the Field of Mutual Recognition of Diplomas and Scientific Grades has simplified recognition procedures for diplomas and professional qualifications issued in Serbia, Albania, and North Macedonia (internal GS4S country report, Serbia).

MRAs often emerge with a specific sectoral or occupational focus, such as Ireland's agreements in place through Engineers Ireland, a professional body in the engineering sector, with Australia, Canada, Hong Kong, New Zealand, South Africa, and the UK (European Commission, 2025-a). Within the EU, Annex V of the Directive on the recognition of professional qualifications establishes a system for the automatic mutual recognition of qualifications in seven professions: nurses, midwives, doctors, dentists, pharmacists, architects, and veterinary surgeons (European Union, 2005; European Commission, n.d.-c). In October 2024, the EU concluded its first bilateral MRA for professional qualifications with a third country, adopting an agreement on the professional qualifications of architects with Canada (European Commission, 2024-b).

Globally, MRAs tend to be unevenly distributed across professions, concentrated in highly technical and regulated professions (Ziguras & Barker, 2024). Professions that often require a license to practise, such as engineering or architecture, have seen more progress in facilitating skills recognition through MRAs, which have a lesser impact in unregulated sectors. MRAs also tend to be more prevalent among countries with a history of recruiting skilled migrants and with a higher degree of regulatory alignment with one another: these trends suggest that countries that are not often recruiting professionals from abroad may link MRAs with an outflow of professionals and perceive these agreements as a potential driver of brain drain (Ziguras & Barker, 2024). These perceived effects, combined with a lack of available data measuring the impact of MRAs on labour

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mobility, have caused some stakeholders to hold off on implementing these agreements to facilitate skills recognition.

Bilateral and multilaterals MRAs play an important role in facilitating cross-border labour market access and offer a faster route to automatic mutual recognition of qualifications compared to slower processes within the EU framework (European Parliament, 2024-a). These agreements foster continuous engagement between regulatory authorities, which can promote alignment of educational systems and occupational standards in the long run (Acosta et al., 2025). However, establishing MRAs can be a time-intensive and challenging process: language barriers, periodic renegotiation, and pushback from professional associations advocating to prioritise employment for citizens are all obstacles that can arise in the formation and maintenance of such agreements (Acosta et al., 2025). Furthermore, bilateral MRAs are inherently restricted to a single corridor, which can pose recognition challenges in the case of subsequent intra-EU mobility of third-country nationals. Other complications can arise when licensing and recognition happens at a subnational level, such as for lawyers or nurses in the United States. Licensure requirements that vary by state or subnational region make it much harder to negotiate effective MRAs at the national level. Despite these challenges, MRAs remain a valuable tool for facilitating skills recognition across borders, particularly for regulated professions.

Developing minimum common training standards

Harmonising international training standards at the sectoral level is another approach stakeholders can adopt to enhance skills recognition and overcome challenges presented by cross-national differences in education and training. By setting uniform benchmarks, it becomes easier to ensure that professionals meet the same qualifications regardless of where they were trained. In addition to easing skills recognition, the creation of international standards also offers a clear framework to inform the development of new professional training programmes.

The efficacy of efforts to facilitate skills recognition through the development of common training standards can vary significantly across economic sectors. In the construction industry, the establishment of universal training standards may face obstacles due to the diversity of practices and the locally rooted nature of the sector (Interview with EBC, 2025). The healthcare sector faces additional complexities as well: a mapping of existing recognition procedures across EMN Member and Observer Countries revealed that most countries impose additional requirements for applicants with third-country qualifications to exercise a medical profession, such as an examination or completion of a work placement or internship (European Migration Network Belgium, 2024). Additionally, training standards require continuous updates to keep pace with ongoing developments and advancements in a particular industry: this constant need for revision can make the implementation and maintenance of common standards more complex and resource intensive.

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The maritime sector serves as a strong example of successful skills recognition through internationally recognised standards.[15] Seafarers working in global shipping are regulated by the International Maritime Organization (IMO), which sets internationally accepted standards on training and education in the sector through the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) (Acosta et al., 2025). EU Directive 2022/993 on the minimum level of training of seafarers, adopted in June 2022, aligns with the international standards set by the IMO and incorporates the STCW Convention into law to harmonise the qualifications of seafarers across the EU (European Union, 2022). It is essential to acknowledge the characteristics of this sector that make it a prime candidate for successful skills recognition through international frameworks: the maritime industry benefits from a centralised, internationally recognised regulatory body and serious safety concerns in the industry necessitate a uniform need for safety and risk management that must be consistently upheld across borders. However, the success of these efforts in the maritime industry offers valuable insights for other sectors seeking to standardise training programmes and qualifications across international boundaries.

Another example of adopting common training standards outside of Europe can be seen in the healthcare sector, where the United States, Canada, and Australia now use the same examination for registered nurses (NCLEX-RN) (NCLEX, 2025). This simplifies the skills recognition process for nurses relocating between these countries and provides prospective migrants from third countries with the opportunity to choose from multiple destinations using the same exam. Opportunities for the harmonisation of common training standards are particularly notable in emerging sectors or those undergoing a major transformation, as transition periods present a valuable opportunity to establish common standards. For instance, the creation of international training standards for green jobs has been widely considered, as these jobs are relatively new and lack entrenched industry standards.

Aligning curricula across migration corridors

Finally, another effective way that stakeholders in the educational field can enhance skills recognition across borders is by directly aligning curricula along labour mobility corridors. Through training partnerships in the context of mobility programmes and schemes, authorities can bridge the gap between national education systems and ensure that qualifications and skills are recognised more easily in situations of international labour mobility. Establishing these partnerships and investing in training facilities abroad streamlines the recognition process upon migrants' arrival to their destination. These types of programmes will be explored further in the development section (see section 3.3), but it is valuable to reflect upon their benefits from a skills recognition standpoint.

[15] The recent World Bank publication, *Global Skill Partnerships for Migration: Preparing Tomorrow's Workers for Home and Abroad* explores the success of skills recognition processes in the maritime industry in more detail, offering insights from a consultation with representatives from sectoral partners in March 2024.

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The GIZ-led Partnerships for Development-Oriented Training and Labour Migration (PAM) project offers a prime example of such a programme, in which trainees from Ecuador, Vietnam, and Jordan undergo VET primarily in their home country and have the option to migrate to Germany upon completion of the programme (Schneider, 2023; PAM, 2025). In the context of this project, various stakeholders from the public and private sectors are brought together to adapt preexisting vocational training programmes to meet German qualification standards, including labour and education ministries, chambers of commerce, private companies, and educational institutions (PAM, 2025). As a result, workers who participate in this programme can obtain full recognition of their qualifications in Germany more easily (An et al., 2023). A similar initiative in the healthcare sector began in 2020 between GIZ and two universities in the Philippines, through which the Bachelor of Nursing curriculum was enriched with specific modules from German healthcare training curriculum (internal GS4S country report, Germany). These adjustments eased the process of qualification recognition for the first cohort of nurses who arrived in Germany in early 2023. In addition to supporting skills recognition in the context of labour mobility, these programmes offer receiving countries the chance to invest in institutional capacity and formalise labour markets in partner countries (see section 3.3).

While these programmes offer significant benefits, they also present key challenges and trade-offs. Aligning curricula and establishing training partnerships to facilitate skills recognition requires considerable time, resources, and coordination between multiple stakeholders across borders. This was a central takeaway of the Youth, Employment, and Skills in Kosovo (YES) project implemented by Germany, where stakeholders realised the gulf between curricula was too wide to bridge: different training structures and programme lengths for construction certificates made it very difficult to reach agreement and translate German standards into the system in Kosovo (Center for Global Development, 2025). Moreover, it's important to acknowledge the limitations of skills recognition instruments more broadly: a certificate or diploma does not guarantee skills. As a result, it is crucial to prioritise continuous development of skilling and upskilling programmes alongside efforts to better recognise existing qualifications. In the following section, this paper will explore various initiatives focused on skills development, examining how these programmes complement mechanisms to validate existing qualifications and further close skills gaps in domestic labour markets.

3.2.2. Fostering skills development of domestic populations

The validation of foreign credentials is an essential component of addressing skills gaps through labour mobility, but skills recognition and admissions policies are only one piece of the puzzle. Arguably more important are initiatives that foster skills development among domestic populations, including foreign-trained workers who have entered labour markets through non-labour streams. The European Commission's Action Plan to tackle labour and skills shortages, introduced in March 2024, underscores the importance of enhancing the skills of local workers: three of the plan's five pillars focus on strengthening domestic workforces (European Commission, 2024-c). While skills and training are often viewed as national or regional competences, European

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institutions play a key role in complementing efforts at the national level by generating international awareness of skills and labour shortages, coordinating regional efforts to enhance skills development, and fostering vital knowledge-sharing among EU Member States (Interview with Cedefop, 2024; Interview with DG EAC, 2025). The following sections explore strategic initiatives that seek to close skills gaps by promoting domestic skills development through upskilling and reskilling and modernising education and training systems to align with modern labour market demands.

Launching targeted initiatives to upskill and reskill workers in priority sectors

Skills shortages represent a serious problem for employers across Europe, with 77 per cent of EU companies reporting difficulties in finding workers with the necessary skills (European Union, 2023-a). Skills shortages emerged as the top-ranking problem facing small and medium-sized enterprises (SMEs), according to the Eurobarometer survey on 'SMEs and skills shortages' (European Union, 2023-b). The ongoing green and digital transitions are not only creating new opportunities but fundamentally transforming the demand for skills and workforce dynamics across various industries. However, a significant digital skills gap persists in Europe, with the Digital Economy and Society Index 2024 revealing that four out of ten adults lack basic digital skills (European Commission, 2025-c). Cedefop's European Skills and Jobs survey found that 52 per cent of EU+ adult workers need to further develop their digital skills to perform their main job more effectively (Cedefop, 2022).

To address these challenges and close critical skills gaps, European institutions have established a wide range of schemes alongside national governments to improve domestic workforce skills through upskilling and reskilling, equipping workers with the necessary technical and soft skills to navigate an increasingly competitive and rapidly changing labour market. These initiatives place a particular emphasis on skills development tied to the digital and green transitions and are supported by substantial EU funding available to invest in upskilling and reskilling initiatives. These include the European Social Fund Plus (ESF+), the Recovery and Resilience Facility, the Digital Europe Programme, the Erasmus+ programme, and more (Interview with DG EAC, 2025; European Commission, 2023-c).

In the construction sector, the BUILD UP Skills Initiative began under the Intelligent Energy Europe programme in 2011 with the goal of boosting the number of skilled workers in the construction industry across Europe (European Commission, n.d.-d). The initiative focuses on training workers to carry out high-energy performance building renovations and construct new nearly zero-energy buildings (Construction Blueprint, n.d.). Since 2011, more than 90 projects have been funded in the context of this initiative, corresponding to an EU contribution of more than EUR 50 million and including the development of new training methods and training schemes in different thematic areas (European Commission, n.d.-d). The BeWell Skills Strategy is an ongoing initiative in the healthcare sector co-funded by the Erasmus+ programme and focused on the digital and green upskilling and reskilling of the workforce (Interview with HOSPEEM, 2024). From 2022 to 2026, this programme aims to develop a green and digital skills strategy for the health ecosystem and co-

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create training programmes to modernise the workforce at a local, national, and European level (BeWell Project, 2025). Beyond the healthcare sector, a wide range of upskilling and reskilling initiatives focused on digital skills have been implemented at the EU level in recent years (see Box 4).

While skills development initiatives play a crucial role in addressing shortages and modernising the workforce in target sectors such as construction and healthcare, challenges persist with leveraging these initiatives – particularly at the EU level – to comprehensively and sustainably close skills gaps. For instance, investments in skills tend to disproportionately benefit individuals who already possess advanced competences and have seen historically limited reach to marginalised communities or rural areas (Interview with Cedefop, 2024). Moreover, while significant attention and resources are directed toward upskilling and reskilling for the digital and green transitions, other skills gaps tend to receive less targeted support. This imbalance underscores the need for a more inclusive approach to workforce skills development that addresses a wide range of industries, ensuring that no area is left behind in the rapidly evolving job market. Finally, national variations in governance structures across Europe mean that there is no 'one-size-fits-all' approach to skills development programmes. For instance, regional authorities hold more power in countries like Belgium and Germany compared to Greece, where efforts are predominantly centralised at the national level (Interview with Cedefop, 2024). As a result, it is essential to foster collaboration between national, regional, and local authorities to ensure that skills development initiatives are tailored to diverse needs across Europe.

Box 4 – Main EU initiatives to support digital skills development

Throughout its 'Digital Decade' policy programme, the EU aims to create a human-centric, sustainable digital society that empowers citizens and businesses. By pursuing new opportunities for learning, work, and personal growth, the EU aims to enhance freedoms and rights for EU citizens to ensure no one is left behind and that everyone has access to technology and its benefits (European Commission, 2025-d). The Digital Decade framework includes measurable targets in four areas: connectivity, digital skills, digital business, and digital public services. It also establishes objectives to guide Member States' actions and tracks progress through annual reports. As such, the Commission aims to make this Europe's Digital Decade, emphasising the need to strengthen digital sovereignty and set its own standards, particularly in data, technology, and infrastructure.

Acknowledging that governments and the EU must provide supportive frameworks for businesses and workers, while also considering the climate and environmental impact, the European Social Partners Framework Agreement on Digitalisation represents a shared commitment of European social partners to manage digitalisation in the workplace. As such, one notable example of an initiative aiming to tackle the digital skills gap in Europe is the Digital Skills and Jobs Coalition (DSJC). Launched by the European Commission in 2016, this coalition brings together Member States, companies, education providers, and civil society organisations and

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aims to tackle the growing digital skills gap across Europe by offering trainings, resources, and opportunities for individuals to gain the skills necessary for the digital economy (Digital Skills & Job Platform, n.d.). The Digital Skills and Jobs Coalition fosters collaboration across public and private organisations to support upskilling and reskilling workforces and ensuring they effectively leverage digital technologies in the workplace.

In addition, the Digital Education Action Plan (DEAP) aims to provide a high-quality, common vision of digital education in Europe that is both inclusive and accessible. In doing so, the initiative aims to facilitate the digitalisation of education and training systems in Member States. Established against the background of the COVID-19 pandemic, DEAP calls for greater cooperation on digital education and efforts to enhance digital competences across Europe (European Commission, 2023-d). One avenue through which the DEAP seeks to achieve this is the European Digital Education Hub, an online community of education professionals and policymakers created to mitigate fragmentation across digital education policies and their implementation in practice (European Commission, n.d.-e).

Providing the foundations to support these initiatives is the Digital Europe Programme (DIGITAL), which provides strategic funding to address the aforementioned challenges, particularly in the areas of cybersecurity, artificial intelligence and advanced digital skills (European Commission, 2025-e). DIGITAL supports industries, SMEs, and public administration in their digital transformation through European Digital Innovation Hubs (EDIH). With a budget of over EUR 8.1 billion, DIGITAL aligns with the EU's 2030 Digital Compass and Path to the Digital Decade policies, complements other EU programmes like Horizon Europe and the Connecting Europe Facility, and makes up part of the Strategic Technologies for Europe Platform (STEP) to enhance industrial competitiveness and European sovereignty (European Commission, 2025-e).

Enhancing the quality of education and training systems

Skill mismatches represent a major challenge in EU labour markets, as many workers' skills and education levels do not align with their current job requirements. The second iteration of Cedefop's European Skills and Jobs survey, conducted in 2021, found that 40 per cent of EU workers are mismatched in terms of qualification level: 28 per cent are overqualified and 12 per cent are underqualified (Cedefop, 2022). While several policy interventions can be employed to tackle skills mismatches, education and training policies play a central role in better aligning the skills of a workforce with modern labour market demands. Therefore, another key set of initiatives aimed at closing the skills gap through domestic skills development focuses on enhancing the quality of education and training systems through structural reforms and the adoption of innovative strategies. These policies seek to modernise and adapt education and VET frameworks to meet evolving industry needs and better align existing educational systems with the demands of today's job market.

At the national level, several countries have introduced skills development strategies aimed at harmonising the offerings of academic and training institutions with the labour market. These

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strategies present a key opportunity for collaboration with private sector stakeholders and for industry partners to actively contribute to the development of competency-based vocational training, as highlighted in country-level interviews in Egypt and Bangladesh (internal GS4S country report, Egypt; internal GS4S country report, Bangladesh). Several European countries have implemented structural education reforms to better align educational systems with industry needs. For example, the Swedish Parliament has enacted amendments to the Education Act aiming to ensure that labour market needs are considered when determining course offerings at upper secondary education institutions (Cedefop, 2024). An ongoing project in Cyprus aims to better link higher education and the labour market through the development of a national graduate tracking mechanism and the implementation of an employers' skills survey (Cedefop, 2025-a).

With regard to vocational training, the Centers of Vocational Excellence (CoVEs) are a key policy initiative designed to enhance the quality of VET systems by fostering closer collaboration between vocational education providers, industry partners, and local communities. This initiative aims to promote excellent vocational education across the EU through a network of centres delivering high-quality, competency-based vocational training that aligns closely with the dynamic needs of the labour market (European Commission, n.d.-g). Formed by networks of local stakeholders within a 'skills ecosystem', CoVEs provide an essential platform for innovation and knowledge exchange (European Commission, n.d.-h). As part of broader efforts to modernise vocational education systems, CoVEs are instrumental in promoting best practices, improving training standards, and ensuring that educational outcomes match labour market requirements. In this way, they exemplify a targeted approach to improving education and training systems, helping to bridge skills gaps and ensuring that workers are equipped with the competences needed for current and future job markets.

These national and EU-level initiatives are crucial in improving the alignment of education and training systems with labour market demands. However, enhancing the quality of education and training systems through structural, innovative reforms requires significant time and resources. While large-scale educational reforms offer a long-term investment that can help address skills mismatches over time, they are less able to respond to immediate, acute skills needs in the short term. Additionally, the success of these reforms hinges on the availability of reliable and accessible data on current and future skills needs (Interview with Cedefop, 2024; Interview with EESC, 2025). Collaboration with key private sector stakeholders is also vital, as their expertise ensures that educational reforms align with industry demands. Without reliable data and industry coordination throughout the planning, implementation, and evaluation phases, these reforms may fall short in effectively addressing critical skills gaps.

Facilitating essential dialogues with private sector stakeholders

As demonstrated in the previous sections, successful skills development initiatives depend on coordination with diverse stakeholders and input from sectoral partners. Education and training policies aiming to address skills shortages or mismatches must be adaptable to evolving market demands and designed in close collaboration with industry leaders to ensure they effectively target

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current and future workforce needs. A final group of initiatives supporting skills development efforts are those that foster vital dialogues between policymakers and other key stakeholders, including employers and social partners like trade unions and employer organisations. These collaborative frameworks and working groups bring together key stakeholders within the skills ecosystem[16] to promote a more inclusive and sustainable approach to workforce skills development and play a crucial role in shaping effective, demand-driven skills development strategies.

The Sectoral Social Dialogue Committees, for example, serve as a vital platform for collaboration and dialogue with social partners at the industry level across Europe. Established in 1998 by Commission Decision 98/500/EC, these committees provide a forum for social partners within specific industries to come together, align on joint positions, and offer recommendations that can influence policies at both the EU and national levels (European Commission, n.d.-i). The Sectoral Social Dialogue Committee for Construction holds an annual meeting dedicated to VET matters, attended by representatives from employers' associations and trade unions who can discuss key initiatives in depth and contribute to policymaking processes that impact their respective sector (Interview with EBC, 2025). This dialogue plays a critical role in setting agendas at the national and international level and shaping the development of targeted skilling initiatives, ensuring that they are responsive to the evolving needs of the labour market and aligned with the priorities of both employers and workers within the sector. The Advisory Committee on Vocational Training (ACVT) offers another important forum, bringing together representatives of trade unions, employers, and Member States' governments at biannual meetings to support the Commission in developing the EU policy framework for vocational education and training (European Union, 2023-c). Finally, the European Centre for the Development of Vocational Training (Cedefop) also plays a central role in fostering dialogue between social partners and policymakers on skills development. One of Cedefop's core functions is to serve as a bridge between social partners and European policymakers, promoting a shared understanding of skills gaps and workforce needs and contributing to more informed and effective policymaking at the national and EU level (Interview with Cedefop, 2024).

While various initiatives, such as the Sectoral Social Dialogue Committees and the ACVT, play a crucial role in fostering dialogue between policymakers, employers, and social partners, there is still room for improvement. These platforms are vital for aligning education and training policies with labour market needs, but they are not always sufficiently consulted or integrated into decision-making processes throughout the end-to-end policy development cycle (Interview with EESC, 2025). To effectively tackle the evolving challenges of skills development, it is crucial to consult these stakeholders early in the development of skills initiatives and integrate their insights

[16] The European Centre for the Development of Vocational Training (Cedefop, 2025-b) defines a skills ecosystem as a 'community (businesses, industry/sector, education and training providers, NGOs, local or regional stakeholders, etc.) in which individuals and organisations connect and interact to address skill needs and develop, use and transmit, in an autonomous way, knowledge, abilities and competences'. Skills ecosystems primarily span three areas: governmental authorities, educational institutions, and industry partners.

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throughout, ensuring that policies remain responsive and relevant to the needs of all relevant stakeholders.

3.3. Development Policy Responses to Skills Shortages

Development policies and actors have played a significant role in shaping skills availability in partner countries, sometimes addressing skills shortages in the EU. While primarily aimed at fostering sustainable growth, stability, and poverty reduction in developing nations, development policies can and have also had important spillover effects on global labour markets (Ioannides & Eisele, 2024). In many cases, this impact has been unintentional or indirect. Through investments in living conditions, education, workforce development, and institutional capacity aiming to support partner countries these policies can indirectly influence labour mobility to the EU (Interview with GIZ, 2025). In other cases, development actors have more deliberately aligned their efforts with migration policies or incorporated migration considerations into their work to maximise the impact of migration on development (Dempster & Tesfaye, 2022; European Commission, 2024-d).

The role of development agencies (and other development actors) in labour migration policies is, however, relatively new (Dempster & Tesfaye, 2022). This higher involvement often stems from the recognition that when migration policies and recruitment efforts in developing countries are divorced from development objectives, they can inadvertently contribute to skills shortages (brain drain), weakening local labour markets and slowing economic growth. Instead, when development initiatives and labour demand in destination countries are better aligned, they can support opportunities for mutually beneficial economic growth, strengthen both local and global labour markets, and help tackle brain waste in partner countries (Interview with GIZ, 2025). Development actors' engagement in labour migration has, therefore, primarily been incentivised by efforts to promote economic development, reduce poverty, and address irregular migration in countries of origin. Their involvement has ranged from light coordination and knowledge-sharing roles to deeper collaboration through co-financing or joint implementation of migration-related projects (Dempster & Tesfaye, 2022).

At EU level, having recognised the cross-cutting nature of development policies and their overlap with other policy areas, different policy tools have aimed to prioritise policy coherence in development actions (European Commission, 2024-d). These efforts aim to integrate development considerations into broader strategies and investments likely to have an effect in partner countries rather than treating them as isolated efforts (European Commission, 2019; Ioannides & Eisele, 2024). This has been done with the goal of preventing unintended negative consequences on development while leveraging the impact of other policies on development outcomes. In recent years, a lot of attention has been given to the development-migration nexus at EU level, with a primary focus on Sub-Saharan Africa, particularly on the Sahel and the Greater Horn of Africa (European Commission, 2024-d).

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In line with the above, several Member States have also given greater attention to the development-migration nexus. In some cases, their development strategies explicitly recognise the need to support orderly and safe migration understanding that, while not a development goal in itself, international mobility can serve as a catalyst for economic growth and development (European Commission, 2024-d; Ionnides & Eisele, 2024).[17] This is achieved, for instance, by alleviating pressure on local markets — reducing unemployment or underemployment in partner countries — and through supporting development through remittances and knowledge transfers (Ioannides & Eisele, 2024). The national development strategies of both Spain and France, for example, explicitly recognise that legal migration can contribute to inclusive growth and sustainable development, benefiting both origin and host countries (European Commission, 2024-d).

Typically, national development agencies managing Official Development Assistance (ODA)[18] and non-ODA assistance have played a central role in development initiatives. Yet recent emphasis on the development-migration nexus — along with growing interest and involvement from multi-level government authorities, civil society, universities, and employers in directly engaging with partner countries — has broadened the range of actors involved in and influencing development policies, including through self-proclaimed—non-ODA eligible—development initiatives (Ioannides & Eisele, 2024).

Box 5 – EU framework to development policies

The European Union and its Member States are the leading providers of official development assistance (ODA) worldwide, with development policy being a key element of the EU's external action (European Parliament, 2024-b). The legal foundation for the EU's development policy is set out in several key provisions. Article 21(1) of the Treaty on European Union establishes the overall mandate for development cooperation, while Articles 4(4) and 208-211 of the Treaty on the Functioning of the European Union define its role, including budgetary and implementation matters (European Parliament, 2024-b; Council of the European Union, 2015).

A cornerstone of EU policy lies in the Policy Coherence for Development (PCD) framework, which was introduced in 2005 to ensure that all EU policies—such as trade, finance, climate action, migration, and security—contribute positively to development goals rather than undermining them. This principle was reaffirmed in the European Consensus on Development (2017), which underscored the EU's commitment to integrating PCD across all policy areas

17 For instance, BE, DE, ES, FR, IT, LV mention the European Commission (2024-d) in their national development strategies.

18 Official Development Assistance (ODA) refers to government aid designed to promote the economic development and welfare of developing countries. It includes grants and concessional loans provided by official agencies (including state and local governments), excluding military aid and primarily commercial transactions. The OECD's Development Assistance Committee (DAC) monitors and sets the standards for ODA, ensuring transparency and effectiveness in global development efforts. See: https://www.oecd.org/en/topics/official-development-assistance-oda.html

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covered by the 2030 Agenda for Sustainable Development (Council of the European Union, 2015; 2023).

Regarding development-migration policy coherence, the Global Approach to Migration and Mobility (GAMM) from 2011 underlines the importance of ensuring complementarity between EU migration policies and development cooperation objectives. The Valletta Declaration (2015) links Member States' migration management with development objectives. And the Joint Valletta Action Plan outlines four key pillars of work with African associated partners, financed through the EU Emergency Trust Fund for Africa: addressing the root causes of migration, expanding legal migration pathways, ensuring the protection of migrants and refugees, and maximising the development impact of migration. Furthermore, in November 2023 the EU signed the Samoa Agreement, which replaces the Cotonou Agreement as the main legal framework governing EU relations with African, Caribbean, and Pacific countries (European Parliament, 2024-b; European Commission, 2024-d). This agreement strengthens partnerships in areas such as human rights, governance, trade, climate action, migration, and economic development, reinforcing the EU's commitment to sustainable development and global stability while emphasising the need for policy coherence. The agreement envisages closer migration and development cooperation, including through promoting vocational trainings, limiting brain waste, and further engaging diaspora in development.

The European Union has also played an important role in financing development initiatives—especially those with a migration-development nexus. Recognising the need for a more streamlined and efficient funding mechanism, the EU established the Neighbourhood, Development, and International Cooperation Instrument – Global Europe (NDICI-GE) in 2021. This instrument consolidates previous EU financing mechanisms, streamlining support for partner regions, including Sub-Saharan Africa, Asia-Pacific, and the Americas. NDICI-Global Europe also prioritises thematic issues such as human rights, democracy, and climate resilience to ensure development assistance remains targeted and impactful (European Commission, 2024-d). Other EU funds used to finance development projects include AMIF and EUTF (Ionnides & Eisele, 2024).

While previous sections have examined how migration and education policies contribute to addressing skills shortages in the EU, this section focuses specifically on initiatives driven by a primary development mandate. The examples in this section pertain to both official development cooperation efforts and initiatives sometimes driven by other policy goals, but with a clear development component (even if non-ODA eligible). The analysis focuses on better understanding the role that development policy instruments and actors have intentionally or unintentionally played in addressing skills shortages in Europe. It, therefore, focuses mainly on investments aimed at supporting skills and mobility programmes and efforts aimed at improving governance and infrastructure around labour migration in partner countries.

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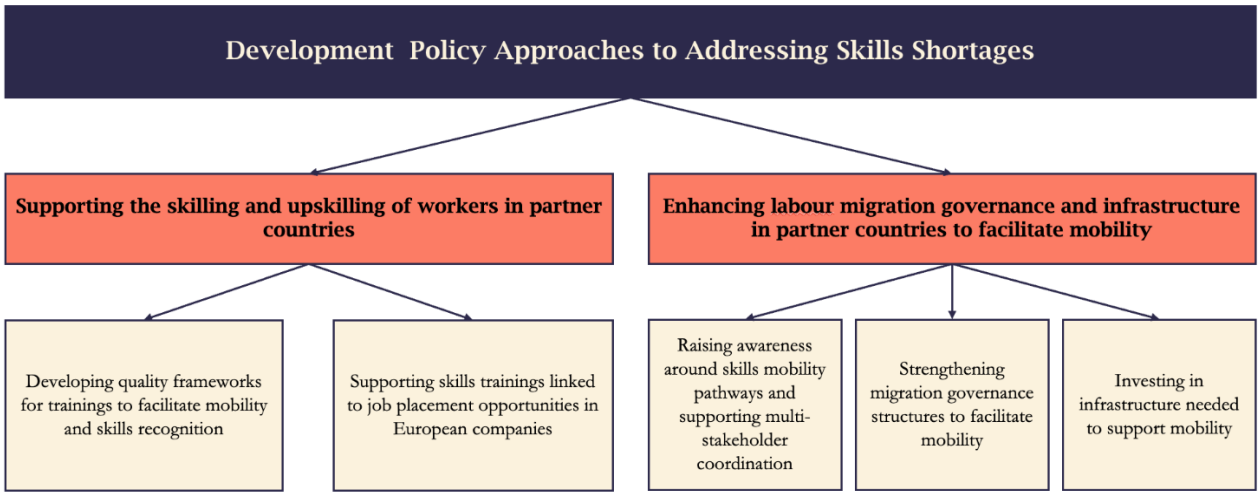
Figure 4. Typology of development policy approaches to addressing skills shortages.



Source: Prepared by the authors.

3.3.1. Supporting the skilling and upskilling of workers in partner countries

One way in which development policies and actors have helped address skills shortages in Europe is through initiatives aiming to strengthen skilling, upskilling, and re-skilling efforts in partner countries, in line with job opportunities in EU countries. These efforts include initiatives focused on improving the frameworks used by training systems at home as well as direct investments in skills development facilitating mobility to Europe.

Developing quality frameworks for trainings to facilitate mobility and skills recognition

The lack of mechanisms for skills recognition—as well as the length and complexity of existing procedures—for TCNs seeking employment in Europe (see section 3.2), together with scepticism from European employers, often leave these workers underemployed, unable to fully utilise their qualifications and expertise. Part of the reason for the limited recognition of skills relates to concerns in the assessment of these skills and alignment in curricula. Development initiatives have often focused on enhancing the quality of frameworks, curricula, and methods used in education systems and for technical and vocational education and trainings (TVET) in partner countries. In some cases, efforts in this regard have aimed to not only support local capacity building and quality standards to meet local needs but also to align with EU standards, improving the transferability of skills and facilitating recognition (Interview with GIZ, 2025). At EU level, for example, the Erasmus+ Fund has supported investments in this regard, (IISD Ghana, n.d.; European Commission, n.d.-f) while individual Member States have also taken on or actively funded initiatives operationalised by development and other actors in this regard.

Examples of this approach include investments on quality seals or standards for trainings that align their methods and curricula to those used in specific EU countries with the aim to support

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mobility.[19] For example, in Austria, the Three-Year Programme on Austrian Development Policy (2022–2024) (Federal Ministry Republic of Austria, 2022)[20] aims to—among other things—establish a nationwide dual vocational training model in Serbia inspired by the apprenticeship systems in Austria and other German-speaking countries with the aim to ensure the workforce is aligned with industry demands (Federal Ministry Republic of Austria, 2022).[21]

Another set of initiatives in this regard have focused on train-the-trainer efforts (this is, training TVET educators). These initiatives have been implemented by development and non-development actors to improve the quality-of-service delivery and, sometimes, also to facilitate mobility. The *Magallanes for Teachers* project in Italy, for example, has been recently introduced with the idea to help Peruvian educators in the health sector travel to Italy to understand the Italian healthcare system and potentially establish dual-degree programmes that facilitate mobility (Author's personal communication, 28 February 2025).

By strengthening local capacity for offering internationally recognised training, development actors have supported efforts promoting skilled migration to Europe. This approach has allowed TVET to take place in migrants' home countries, empowering them with the necessary skills before they move, rather than relying on training in destination countries. It is important to note, though, that most development initiatives aiming at improving TVET curricula remain focused on local labour markets and lack a clear link facilitating mobility to Europe. Additionally, the curricula are often largely shaped by technological advancements of partner countries. As a result, some critical skills required in Europe, such as those linked to the green transition for construction workers, may still be overlooked in partner countries due to differences in practices, priorities, or technologies.

Supporting skills trainings linked to job placement opportunities in European companies

Beyond efforts shaping the quality of and curricula covered in trainings, development actors have also played an important role in directly delivering some of these trainings, supporting skills and mobility partnerships (Interview with GIZ, 2025).[22] While in most instances, the focus has been solely on providing training tailored to the local labour market (International Labor Organization, n.d.), a few initiatives have supported a dual track approach, preparing individuals for both domestic employment as well as opportunities in Europe.

19 For instance, GiZ and the German government developed a quality seal for trainings in the nursing sector, which facilitates labour mobility as well.
20 The programme is implemented by the Austrian Economic Chamber (WKO) and the Serbian Chamber of Commerce, in cooperation with the Austrian Agency for Education and Internationalisation (OeAD) and Serbia's Ministry of Education.
21 The programme is implemented by the Austrian Economic Chamber (WKO) and the Serbian Chamber of Commerce, in cooperation with the Austrian Agency for Education and Internationalisation (OeAD) and Serbia's Ministry of Education.
22 For example, in ODA-financed projects, there is a clear distinction (and limit) between offering training aligned with the needs of EU Member States and playing a role in international recruitment or facilitating mobility.

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Some initiatives have supported access to European labour markets from home—either by promoting remote work opportunities or facilitating employment in foreign companies operating locally. One example is the *Tierra Firme* programme, facilitated by the Government of the Canary Islands in collaboration with the Spanish Chamber of Commerce in Senegal (Chambre Officielle de Commerce d'Espagne au Sénégal, n.d.; author's personal communication, 7 March 2025). The programme, developed in response to skills shortages faced by Spanish companies in Senegal, offers trainings through local centres, with experts from the Canary Islands occasionally supplementing this with specialised instruction. Participants also undertake a three-month apprenticeship in Spanish companies facing shortages, with the aim of securing formal employment afterward. While not an ODA project, *Tierra Firme* operates with a development mandate, addressing both the need to strengthen human capital in Senegal and skills shortages faced by Spanish companies in Dakar.[23] This programme is set to be replicated in Mauritania with a few companies working in the construction sector (Author's personal communication, 7 March 2025).

In recent years, greater EU focus on skills development and mobility programmes has meant that trainings (and train-to-hire models) in partner countries are increasingly utilised to facilitate employment opportunities in Europe, by equipping workers with the qualifications needed to meet labour market demands in both their home and destination countries. This dual-track approach has become a key feature of recent Migration Partnership Facility (MPF) projects and other mobility-focused initiatives (Hooper and Slootjes, 2025). For instance, under the Indo-German Programme on Green Skills (IGGSP), trainings are being designed to meet both Indian and German standards, allowing for employment in either country (Interview with GIZ, 2025). Similarly, the EU's International Cooperation and Development (DEVCO) programmes and the Global Skill Partnership model have both also used this dual track approach to equip workers with the necessary skills for both local and international job markets while ensuring that some trainees stay and strengthen the local labour markets (European Commission, 2024-d). Several EU-backed projects implemented by specific Member States follow this model too. The GIZ Triple Win Project trains nurses in their home countries, preparing some for employment in Germany while strengthening healthcare sectors in origin countries (GIZ, 2024). And Belgium's Pilot Projects for Entrepreneurial Mobility (PEM) in Senegal supports entrepreneurs and their employees through mentoring, apprenticeships, and training services available in both Senegal and Belgium (Global Forum on Migration and Development, 2023).

In many cases, actors operating in the field of development can also help facilitate access to language training at origin, which can otherwise be a significant barrier for professions where language qualifications may limit mobility as a pre-requirement for visas (such as for nurses or doctors).

Overall, different sectors have been targeted through these skilling, upskilling, and re-skilling initiatives—including healthcare, green technologies, and digital industries but also construction

23 After a successful pilot benefiting 30 workers, the programme expanded to train 250 more, further supporting local job creation and business growth.

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and agriculture—with the involvement from different stakeholders from the development, public, and private sector. Yet there is still often a mismatch between skills development programmes in partner countries and the specific needs of local and international labour markets. Furthermore, systemic barriers in some partner countries often prevent access to these trainings for women or people living in underprivileged rural areas, for example, limiting the impact of efforts in this regard (Abdel Fattah et al., 2024).

3.3.2. Enhancing labour migration governance and infrastructure in partner countries to facilitate mobility

Effective skills development and mobility initiatives require more than just skilling, upskilling or re-skilling programmes targeting the local population or the mere establishment of migration pathways. Their success also depends on strong governance systems that facilitate well-managed migration in partner countries, as well as on the visibility and accessibility of these pathways. In some cases, development initiatives have—intentionally or unintentionally—helped bridge these gaps and addressed barriers in using mobility programmes by raising awareness about them, strengthening migration governance structures, or investing in relevant infrastructure. Through investments in these areas, development actors have supported access to safe and legal labour migration pathways to Europe, helping address skills shortages in destination while also driving development in partner countries through remittances, skills transfer, and knowledge exchange.

Raising awareness around skills mobility pathways and supporting multi-stakeholder coordination

A lack of awareness of mobility pathways among government stakeholders in partner countries, or limited coordination between policymakers responsible for skills development and those overseeing migration (Abdel Fattah et al., 2024), can hinder the effectiveness of skills mobility programmes, leading to inefficiencies, delays, and even missed opportunities for workers wanting to move to Europe. Additionally, when workers themselves are unaware of these pathways or how they operate, they may not use them or become more vulnerable to unfair recruitment practices or exploitation—which not only threatens their well-being but also undermines the long-term sustainability of mobility initiatives.

Due to their strong networks and presence on the ground, development actors play an important role in helping address these gaps. For instance, some initiatives have focused on raising awareness among officials to familiarise them with mobility opportunities. Others have focused on raising awareness among local workers, either through word of mouth or in supporting the establishment of information centres. Germany's *Centres for Migration and Development*, for example, have played an important role facilitating local citizens and migrants in partner countries with access to information about existing regular migration to Germany and Europe alongside vocational training and sustainable reintegration (including job search) support.

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Beyond awareness raising initiatives, development actors can also play a relevant role in fostering multi-stakeholder coordination both within partner countries and between partner and destination countries (Adhikari et al., 2021). By bridging the gap between aid investments, labour market priorities, and EU employer needs, they can help create more effective and sustainable skills mobility solutions. For example, GIZ has collaborated with the German Federal Employment Agency for years now to better align the labour migration interests of partner countries with the workforce needs of companies in Germany (Dempster & Tesfaye, 2022). Furthermore, they can help address barriers linked to scaling mobility partnerships by improving coordination among different ministries and government authorities on the ground (Adhikari et al., 2021).

Strengthening migration governance structures to facilitate mobility

Development initiatives have also played a key role in strengthening migration governance linked to skills and mobility pathways to Europe through strengthening migration management systems and frameworks, building institutional capacity, and promoting ethical practices in recruitment and worker protection. One example is the partnership between the French Development Agency (AFD), the NGOs Mercy Corps, and Grdr Migration-Citoyenneté-Développement, which supported capacity building in Tunisia by helping local authorities develop migration and development action plans, supporting the local implementation of the national migration strategy (Agence Française de Développement, n.d.).

The Spanish Development Agency (AECID), to take another example, was involved in designing Senegal's *Bureaux d'Accueil et d'Orientation des Migrants* (BAOS, or Welcome and Orientation Offices for Migrants) (Authors personal communication, 11 March 2025). These offices aim to promote safe migration, reduce irregular migration, and support the sustainable reintegration of migrants into Senegalese society. The BAOS have also contributed to the dissemination and pre-selection of Senegalese workers accessing a circular mobility programme in agriculture in Spain. The German Agency for International Cooperation (GIZ) has also contributed to improving migration governance, for instance, through the THAMM Plus (*Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa*) (GIZ, n.d.). The initiative strengthens the capacity of partner institutions in countries of origin to manage labour mobility more effectively by supporting the digitalisation of administrative processes and the establishment of a network to streamline labour migration and enhance coordination between stakeholders.

Development initiatives have also helped improve governance around recruitment and job placement practices in partner countries. For example, the GIZ has collaborated with Indonesia to regulate recruitment agencies, helping enforce ethical labour practices and better protect migrant workers moving to Europe (Interview with GIZ, 2025). And the PALIM (Pilot Project Addressing Labour Shortages through Innovative Labour Migration Models) project, led by Enabel, the Belgian Development Agency, fostered the exchange of best practices in international job placement between public employment services in Morocco, Flanders, and the Brussels Region, leading to significant institutional capacity building (MPF, 2021).

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Furthermore, development actors have sometimes played an important role in circular mobility programmes by providing pre-departure orientation, ensuring oversight while abroad, and supporting their reintegration and productive use of savings after return. Under the *Wafira* circular labour mobility programme, for instance, Moroccan women employed in Spain's strawberry-picking sector receive pre-departure training from Oxfam Intermón Spain. These sessions aim to combat misinformation and reduce the risk of exploitation, with early results indicating improved wage compliance and better working conditions (Interview with Oxfam, 2025). To support with oversight, Oxfam has also established an 'observatory' engaging civil society stakeholders in Spain to monitor the situation on the ground and report back any concerns.

Investing in infrastructure facilitating mobility

Finally, development policies have, sometimes indirectly, facilitated skills mobility to Europe by investing in equipment and infrastructure in partner countries (European Union, 2024). For example, investments in digital infrastructure can facilitate access to education and online trainings while also improving access to international hiring processes and remote work opportunities. Similarly, investments in machinery for issuing documents and travel permits in partner countries can at the same time help streamline barriers around visa processes (see section 3.1). And investments in training facilities are ultimately necessary to continue supporting skills development and mobility.

By supporting skills development and mobility programmes with Europe and strengthening migration governance and capacity building in partner countries development policies have played an important role in addressing skills shortages in the EU. However, several challenges stand in the way of scaling the impact of these policies in addressing skills shortages in EU Member States. One of the key obstacles is the unclear mandate and limitation for using development cooperation funding for activities perceived as benefiting EU countries (Interview with GIZ, 2025). This is especially true regarding the use of ODA funds for migration-related activities. Despite the guiding principles and criteria established by the Development Assistance Committee by the OECD (OECD, n.d.) to guide ODA reporting on migration, many development agencies still feel constrained in more actively participating in labour migration (Dempster & Tesfaye, 2022; Interview with GIZ, 2025). Adding to this, there is also a lack of clarity regarding what policy coherence means in practice and what constitutes an effective, mutually beneficial (and successful) development policy for addressing labour market needs in both origin and destination countries. Specifically, there is a challenge in trying to maximise the impact on development and balance risks of brain drain with opportunities to address under or unemployment in partner countries, for example, while supporting labour market needs in Europe (Ionnides & Eisele, 2024). This ambiguity makes it difficult to design and implement development strategies that effectively respond to labour market demands in EU countries while maintaining development principles.

Finally, it is worth highlighting that while development projects have traditionally been supported by a mix of national and EU resources, the landscape has shifted in recent years. National funding, once the cornerstone of these initiatives, has been steadily declining in several EU Member States,

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creating an increasing dependence on EU funds to maintain and expand these critical efforts, raising questions about their future (European Commission, 2024-d; Interview with GIZ, 2025).

As a result of the above limitations, the impact of development policies in helping address labour shortages in Europe has been somewhat limited, leaving their full potential untapped. Greater dialogue and coordination are needed to explore how these policies can contribute to (or support initiatives) easing shortages in the EU while maintaining their primary focus on supporting development in partner countries.

4. Cross-Sectoral Policy Coherence in Efforts to Address Skills Shortages

The mapping and typology identified a wide range of policy efforts to address skills shortages across the migration, education, and development (see Figures 2-4 in Section 3). Coherence across these policy domains remains limited, resulting in a lack of alignment and complementarity of policy measures across domains, which weakens their overall impact. For example, while legal labour pathways may exist, without accompanying policies on skills recognition, they will fail to address skills shortages. This was evident in the Youth, Employment, and Skills in Kosovo (YES) programme, where despite the existence of legal labour pathways, differences between Kosovar and German qualification standards proved insurmountable (Center for Global Development, 2025).

This lack of policy coherence stems from multiple factors. Policies that aim to address skills shortages often serve multiple policy objectives at once, with addressing skills shortages being one of many. For example, mobility schemes that operate under the global skill partnership model, such as Germany's Global Skill Partnership for training nurses in the Philippines, aim to fill critical shortages in destination countries while also investing in the skills development and training systems of partner countries, ensuring the majority stays in their home country (Hooper & Slootjes, 2025). Moreover, policy development involves a wide range of stakeholders with different interests, encompassing both the supply and demand sides of skills, and spanning multiple ministries and governmental bodies representing different policy domains at the regional, national, and international levels (OECD, 2016; European Commission, 2025-f). Fragmentation and poor coordination across stakeholders from different policy domains hinder strategic investment, making it difficult to identify and respond to emerging skills gaps in a more holistic way. This complex and fragmented playing field often results in stakeholders operating within their own silos guided by their own priorities, mandates, and constraints, causing a lack of coordination and preventing a cohesive, cross-sectoral approach.

Recognising the multifaceted nature of skills shortages, recent EU-level initiatives seek to foster greater policy coherence across policy domains. The Union of Skills reflects growing recognition that skills issues intersect with diverse policy fields. This cross-DG collaboration – spanning education, migration, employment, industry, and digitalisation – aims to break down silos and align strategies to better address Europe's evolving labour market needs (Interview with DG EAC). This flagship initiative also introduces innovative approaches to skills governance that aim to foster

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coordination and increase coherence in policy responses to shortages, as demonstrated by the European Skills High-Level Board. This body, chaired by the European Commission, will bring together stakeholders including education and training providers, business leaders, and social partners to provide cross-sectoral insights and guidance (European Commission, 2025-f). Thematic working groups within the European Education Area (EEA) strategic framework and the Advisory Committee on Vocational Training also offer valuable forums for exchange, enabling key stakeholders in the field of education to contribute to the broader EU policymaking process (Interview with EESC, 2025; European Commission, 2024-e). The EU Talent Partnerships represent another effort taking a more multidimensional perspective, strengthening the link between migration and skills development by investing in the training ecosystems in partner countries and aligning migration opportunities with labour market needs in the EU. This is supported through targeted funding and the expansion of legal migration pathways that connect trained individuals with identified labour shortages across EU member states (see Box 6). However, while the Talent Partnerships span a range of policy objectives related to migration management in the EU and capacity building in third-countries, EU needs and priorities take precedence as the partnerships are fundamentally targeted to address shortages in Member States' labour markets and reduce irregular migration (de Lange, Forthcoming).

Box 6 – EU Talent Partnerships and policy coherence

The European Commission's Talent Partnerships initiative aims to link mobility opportunities for work or training in the EU with targeted investments in partner countries—focusing on areas like vocational education and training, diaspora engagement, labour market research, and support for returning migrants. As outlined in the Commission's New Pact on Migration and Asylum in September 2020, the initiative has two main goals: to help EU Member States address urgent labour and skills shortages and to strengthen collaboration with third countries on migration, mobility, and broader socioeconomic challenges (European Commission, n.d.-l). As such, the EU Talent Partnerships distinguish themselves from other labour mobility initiatives through their broader thematic scope and geographic reach. In 2021, Talent Partnerships were launched with Morocco, Tunisia, and Egypt, namely due to the countries' willingness to cooperate on returns and tackle irregular migration flows (European Commission, 2023-e). Most recently, in 2024, partnerships were also launched with Pakistan and Bangladesh.

Due to their multifaceted objectives, the EU Talent Partnerships cut across policy domains and require coordination across stakeholders, including various governmental authorities, employment agencies, social and economic partners, as well as education and training institutions (European Commission, n.d.-l). From the outset, the EU Talent Partnerships have represented a deliberate attempt to foster greater coherence across the interconnected policy domains of migration, education, employment, and development. Designed as a hybrid initiative with migration at its core, these partnerships aim to simultaneously work towards multiple policy objectives—improving migration management, building capacity in partner countries, and

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matching local skills in with EU labour market needs—while deliberately positioning migration alongside other policy domains as an equal pillar in implementation. Recognising the challenges ahead, the Commission has sought to navigate potential tensions between these differing policy priorities through inclusive and coordinated governance mechanisms. The 'Team Europe' approach has been instrumental in aligning Member State-led mobility schemes under a common framework. Meanwhile coordination through roundtables and jointly developed roadmaps has helped forge a sense of shared ownership across policy silos.

By adopting a more balanced and long-term approach, the EU Talent Partnerships have the potential to foster more durable cooperation, moving beyond short-term political pressures to focus on shared objectives around skills development, mobility, and sustainable growth (Hooper, 2021). As these initiatives expand in both number and scale—projected to include around ten partner countries by 2030—their holistic success will depend on effective use of these coordination mechanisms to reduce tensions between competing policy objectives and advance shared goals (European Union, 2023-d).

Despite recent efforts to increase coherence across policy domains through coordination mechanisms and structured forums for cross-sectoral stakeholder dialogue—such as the flagship annual European Employment and Social Rights Forum—these instruments often remain insufficiently leveraged (European Commission, 2025-g). For example, the Advisory Committee on Vocational Training, which brings together representatives from Member States, trade unions, and employers' organisations to align EU policies for VET, skills, and qualifications with labour market needs, has remained underutilised in broader cross-sectoral planning processes related to skills (Interview with EESC, 2025). This highlights a persistent disconnect between institutional coordination frameworks and their practical influence on policy outcomes. A key gap lies in the timing and integration of these mechanisms—they are too rarely embedded early or effectively enough in the policy development process to shape decisions. As a result, coordination across policy domains, labour sectors, levels of governance, and with external partners often occurs too late or remains too narrow in scope (Interview with EESC, 2025). Country-level evidence, similarly, points to ongoing coordination challenges and missed opportunities to better link skilling and migration policies and consider their broader impact on third countries (internal GS4S country report, Bangladesh; internal GS4S country report, Estonia; internal GS4S country report, Netherlands).

A final concern is the limited oversight of whether policy coherence, for instance between migration and development policies, is being achieved in practice, as opposed to being an aspirational goal (European Union, n.d.-b; European Commission, 2024-d). This is related to the lack of clear benchmarks or little shared understanding of what successful policy coherence looks like, which hinders efforts to strengthen coordination and alignment across domains (European Commission, 2024-d).

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5. Looking Ahead: Key Lessons and Insights on Bridging the Skills Gap

While migration, development, and education policies have all played a role in addressing Europe's growing skills shortages to date, the complexity and scale of the issue demand a more strategic, cohesive response. The multifaceted nature of skills gaps, combined with the diverse approaches already in place, highlights the need for a comprehensive and coordinated framework that can align migration, development, and education initiatives at both the national and EU levels. As the landscape continues to evolve and the types of skills needed continue to change, policymakers must recognise that tackling skills shortages requires a long-term, cross-policy domain effort, with a focus on fostering collaboration among governments, the private sector, educational institutions, and other relevant stakeholders.

Key takeaways for addressing skills shortages in Europe include:

1. **Better Coordination Across Policy Domains**: Coordination between actors involved in migration, education, and development policies, both at EU and Member State levels, is crucial for effectively and holistically tackling skills shortages and moving beyond siloed approaches. While the European Commission and Member States have worked to improve policy coherence, the practical implementation of these efforts oftentimes remains unclear and coordination between policymakers and other relevant actors across policy areas remains limited. This fragmentation makes it difficult to identify and address gaps and respond to emerging needs. It can also lead to an inefficient use of resources. To support policy coherence, the European Commission and its Member States could introduce more specific guidelines or indicators to help define and monitor what cross-policy coordination means in practice and to advance coherence from early on. Additionally, appointing special envoys or coordinators (both at Member State and EU level) to oversee ongoing policy tools impacting skills availability and setting up spaces for discussion to support peer-learning could also help ensure better alignment across policy areas.

2. **Strengthening Coordination Across Governance Levels and Leveraging the EU's Strategic Role**: Effective coordination among policymakers at regional, national, and EU levels is essential for developing comprehensive solutions to tackle skills shortages across Europe. Efforts to address shortages through migration, education, and development policies often involve a fragmented and disjointed approach, with national and international authorities working simultaneously on the same issues but without coordinating. Fostering collaboration across these policy levels can foster a more cohesive approach to closing skills gaps, ensuring that policies across all levels are harmonised and mutually reinforcing. Actors at each policy level face unique limitations and opportunities. At the national and regional level, governments can better inform and tailor policies to local labour market needs and national frameworks. At the EU level, policymakers can facilitate and promote common frameworks for skills recognition and mobility across Member States. The EU also plays an important role in facilitating knowledge exchange among Member States and

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providing vital funding to advance efforts. To improve coordination across policy levels, national ministries and regional authorities should regularly engage with EU policymakers through structured mechanisms such as intergovernmental roundtables, working groups, and policy dialogues. These platforms can facilitate the exchange of ideas, align strategic priorities, and support the co-creation of roadmaps that promote shared ownership of initiatives and more coordinated approach to skills shortages.

3. **Increased Collaboration with Industry Partners and Other Key Stakeholders**: Policymakers must engage more closely with partners from the private sector to better understand the specific barriers that employers face in filling skilled positions and identify the most pressing obstacles to reducing the skills gap. Private sector stakeholders can provide crucial insights, helping policymakers identify the most pressing skills shortages and ensuring that initiatives such as education and training reforms are aligned with the evolving needs of the industry. For this to happen, coordination opportunities should be embedded early in the policy design process to shape more effective outcomes and policy design. Furthermore, collaborating with the broader skills ecosystem, including education providers, trade unions, and civil society organisations, can enhance the responsiveness and sustainability of skills development efforts. Such collaboration ensures that policies and initiatives are well-integrated, addressing skills shortages holistically to meet the evolving demands of the labour market. Successful skills mobility programmes highlighted in this report, such as the GIZ PAM and Triple Win projects, brought together a range of relevant stakeholders to support the projects' design and implementation, including private companies, labour and education ministries, chambers of commerce, business associations, educational institutions, and more. By involving industry and trade union or civil society stakeholders throughout the entire process—from policy design to implementation and evaluation—governments can create more targeted, demand-driven initiatives to address skills shortages in a socially responsible and inclusive manner.

4. **Enhancing Visibility of Current Efforts Targeting Skills Shortages:** In recent years, numerous flagship policies, initiatives, and projects have been launched at both EU and Member State levels to tackle skills shortages. Keeping up with this patchwork of actions has been challenging for all stakeholders involved. Many businesses—particularly small and medium-sized enterprises, facing the most severe shortages—are often unaware of available mechanisms to attract and retain talent, such as labour mobility schemes, skills recognition frameworks, and reintegration programmes for returning migrants. Likewise, jobseekers inside or outside Europe may not be fully informed about these opportunities and how they could benefit from them. Raising awareness among businesses and jobseekers is key to ensuring that existing policies have a real impact. Sharing positive experiences from both jobseekers and employers can also help build trust and counter scepticism around labour mobility programmes and international hires. Targeted outreach efforts, both online and offline, in origin and destination countries—whether through industry forums, public-private partnerships, or EU delegations and frontline workers in third countries—could help employers and jobseekers better navigate these policies.

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Additionally, establishing centralised information hubs, hotlines, interactive digital platforms, or advisory services could also help bridge the gap between policy design and implementation, ultimately enhancing the effectiveness of MED policy tools in addressing skills shortages.

5. **Addressing Persistent Gaps Between Labour Market Needs and Policy Responses:** A persistent lack of coordination across policy areas and governance levels has often led to uneven attention across sectors and skill levels, leaving some gaps unaddressed while others are repeatedly targeted by fragmented and overlapping initiatives. In particular, there remains a notable lack of legal labour migration pathways for lower-skilled workers in Europe, as well as a missed opportunity to better recognise and utilise the skills of migrants already residing in the EU. Legal frameworks such as the EU Blue Card scheme have proven to be underused, with only a limited number of Blue Cards issued, in part due to the high qualification requirements and income thresholds (Ghodsi et al., 2025). To better inform responsive and inclusive policymaking, a comprehensive mapping of existing policies and their cross-sectoral impact and shortcomings is, however, urgently needed. Enhanced efforts to share data about shortages and policy implementation—both within the EU and with partner countries—are equally essential to identify and guide more strategic and coherent interventions, including around legal frameworks and integration policies. Future legislation should build upon existing legal pathways and prioritise flexibility to address persistent gaps across all sectors and skill levels. One example is the 'Skills and Migration Omnibus', proposed by consortium partners of the GS4S Project in a recent policy brief (Ghodsi et al., 2025). This multistep legislative package, designed to complement existing EU labour migration directives, aims to support EU Member States in addressing shortages by enabling job-seeking permits and easing transitions between different types of work authorisations—thereby strengthening policy responsiveness and inclusiveness across the skills spectrum.

6. **Leveraging Evidence to Amplify Impact**: An evidence-driven approach is essential for effectively tackling skills shortages in Europe. Without reliable evidence, policies risk being reactive rather than strategic, potentially misallocating resources or failing to address real workforce needs. Accurate labour market data and robust forecasting methods are needed to identify current and future skills gaps, enabling policymakers to design targeted and proactive solutions. Comprehensive data collection—integrating employer demand, demographic trends, and educational outcomes—can help refine migration, education, and labour market policies to ensure alignment with actual and projected skills shortages. This includes improving data collection on international student and trainee mobility, which should be integrated with additional labour market intelligence to paint a holistic picture of skills demand in Member States (de Lange, Forthcoming). However, addressing skills shortages is complicated by the fact that many policy initiatives serve multiple, sometimes competing, objectives. Programmes such as the EU Talent Partnerships aim not only to address labour market gaps but also to reduce irregular migration, illustrating how policies often have implicit or explicit goals beyond skills development. While multipronged policies

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can be attractive, they may not always achieve all intended outcomes, and without a clear theory of change or prioritisation of objectives, it is difficult to assess their effectiveness. Furthermore, many policies are implemented without strong evidence on what works, and even when evaluations take place, results are not always shared, limiting the ability to learn from past initiatives. To strengthen the evidence base, the EU and Member States could make funding conditional on evidence that proposed measures have been proven impactful – for example through using a tiered-evidence funding model - and require a monitoring and evaluation strategy as a condition for funding initiatives – as AMIF for example already requires (Slootjes & Zanzuchi, 2022). By fostering a culture of evidence-based decision-making, Europe can develop more effective, adaptable, and sustainable strategies to address its skills shortages.

Delivering on the strategies outlined above will require sustained commitment and coordination from both the EU and its Member States. At the national level, this involves embedding clear evaluation mechanisms and designing skills policies and bilateral agreements with concrete, actionable provisions—helping to close the persistent gap between policy intentions and real-world implementation, as highlighted in several GS4S country reports. At the EU level, these efforts must be supported by further funding instruments and the establishment of structured coordination platforms to ensure alignment between national strategies and EU priorities and foster knowledge-sharing among EU Member States. Equally important is the production and dissemination of data on skills shortages that is digestible, accessible, and forward-looking; evidence designed to be used by policymakers and practitioners alike is essential to support informed decision-making at all levels of governance. By adopting these strategies, Europe can more effectively address the pressing issue of skills shortages and secure a more resilient, skilled workforce for the future.

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Annex 1: EU-Level Interview Participants

Between November 2024 and March 2025, 11 interviews with a total of 20 experts representing stakeholders at the EU level were conducted for this report. Interview participants were selected to provide key insights across all three policy domains covered in the report (migration, education, and development) as well as the project's priority sectors (digital, care, and construction).

Organisation	Interview Participant(s)	Interview Date
1. European Training Foundation (ETF)	Two Human Capital Development Experts	6 November 2024
2. Directorate-General for Migration and Home Affairs (DG HOME)	Two members of the Policy Unit	20 November 2024
3. Council of European Professional Informatics Societies (CEPIS)	Wanda Saabeel (Member of the European Digital Skills Policy Group)	2 December 2024
4. European Hospital and Healthcare Employers' Association (HOSPEEM)	Two members of the Skills Expert Group	11 December 2024
5. European Centre for the Development of Vocational Training (Cedefop)	Department Coordinator, VET and Skills	12 December 2024
6. Oxfam Intermón	Cristina Rovira Izquierdo (North Africa Coordinator and Focal Point for Care Policies), Carlos Ruiz Ramírez (Manager, SafeHabitus Project), César Santamaría Galán (Programme, Inequalities and Power in Latin America and the Mediterranean)	27 February 2025
7. Fragomen	Three labour migration experts	13 March 2025
8. European Builders Confederation (EBC)	Secretary General and Social Affairs Officer	13 March 2025
9. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Benjamin Thomas, Technical Advisor Section Education, Vocational Education and Training, Labour Markets	13 March 2025
10. European Economic and Social Committee (EESC)	Member of EESC Workers' Group	25 March 2025
11. Directorate-General for Education, Youth, Sport and Culture (DG EAC)	Policy Officer	27 March 2025

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Annex 2: Internal GS4S Country-Level Reports

Country	Organisation	Contributing Author(s)	Interviews Conducted
Bangladesh	Ovibashi Karmi Unnayan Program (OKUP)	Shakirul Islam, Urmi Jahan Tanni	9
Egypt	The American University in Cairo (AUC)	Dina Abdelfattah, Nada Gaber, Jessica Botros	3
Estonia	Radboud University (RU)	Ksenija Ivanović, Colleen Boland, Tesseltje de Lange	9
Germany	University of Geneva (UNIGE)	Sandra Lavenex	6
Italy	International and European Forum on Immigration Research (FIERI)	Sara Korbi, Ferruccio Pastore	N/A
The Netherlands	Radboud University (RU)	Tesseltje de Lange, Colleen Boland	5
Nigeria	The Nest Innovation Technology Park Limited (The Nest)	Oluwaseyi Ale, Oluwajoba Oloba	31
Serbia	Radboud University (RU)	Ksenija Ivanović	7
Switzerland	University of Geneva (UNIGE)	Elisa Fornale	8

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Working paper no. 8

Efforts to Tackle Skills Shortages Across Policy Domains – Reflections from Migration, Education, and Development Policies

About GS4S

GS4S seeks to better understand global skills shortages in selected sectors (Digital, Care and Construction) and strengthens evidence-based and multi-level policies on labour migration governance. The project provides new knowledge on alternative and equitable ways for addressing skills shortages in six regions (EU, EEA, Western Balkan, Middle East and Northern Africa, West Africa, and South/South-East Asia).

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