

Our world is experiencing a period of profound change, driven by technological advances – notably in terms of digital technologies – alongside the need for greening our economies and societies. Change affects all countries of the world, transforming their economies and labour markets, albeit at different rates. Change also involves uncertainty, opportunities and risks that need to be managed if progress is to be made towards building more inclusive, greener and more prosperous societies. In this context, governments need to ensure that all their citizens are equipped with the skills to adapt to new labour market realities and the capabilities to contribute to economic and social development.

The questions that arise are: What are these skills? How are they changing in line with the current economic and labour market transformations? Skills needs are defined as the specific competences demanded by employers, firms or economic sectors to enable the economy to function effectively. Such needs may arise as a result of quantitative pressures or skills gaps. They can also appear where new sectors or industries emerge, where new technologies are introduced, or where new jobs are created as a result of convergence between existing sectors or industries.

Documenting changes in labour markets and skills demands is crucial in designing better skills development systems to meet future needs. The alternative is skills mismatch, which presents an obstacle to firms' growth and competitiveness, as well as hindering individuals' ability to advance within the labour market. If done well, skills demand analyses predict future imbalances and inform the public about the potential needs of employers. The final aim is to improve the skills match between labour demand and supply in terms of both quantity and quality. To this end, it is vital to have reliable information about the knowledge and skills required for specific jobs and the likely changes in the content of different occupations.

While many studies on the effects of technological and societal changes on skills demand are undertaken in advanced (high-income) economies, there is little information or evidence that relates to developing and transition countries<sup>1</sup>. This was one of the key findings of the ETF conference 'Skills for the Future: Managing Transition', held in November 2018<sup>2</sup>. Since then, the ETF has launched a series of actions through its Skills Lab<sup>3</sup> to enrich the intelligence on changing skills demands in its partner countries, generating new evidence and analysing and disseminating the existing data.

This publication is part of that effort. Its particular focus is on high or low middle-income countries neighbouring the European Union (EU). The papers gathered here comprise 13 independent articles written by researchers and experts from various countries in response to a call for expression of interest that the ETF launched in 2019<sup>4</sup>. The collection is by no means exhaustive of the research taking place in the ETF partner countries.

Each article documents one or more changes in the labour markets and/or skills demands of the countries reviewed, incorporating relevant case studies backed up by qualitative or quantitative research and data analysis. The labour market changes analysed encompass shifts in sectors, job creation and destruction trends, emerging tasks and occupations, new patterns of employment and changing employment relations. As a consequence, emerging demands for new skills (current and future) and occupations are also addressed. The articles apply a range of different methodologies, many of which are experimental. Indeed, the authors base their analyses on information gathered from different sources and through various data collection instruments, the validity of which could not be verified by the ETF. Accordingly, the results of the

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<sup>1</sup> Although different terms and definitions can be used regarding the development phase of countries, for example transition countries, developing countries or emerging economies, this publication primarily focuses on the ETF partner countries (see [www.etf.europa.eu/en/regions-and-countries](http://www.etf.europa.eu/en/regions-and-countries)). With the exception of Israel, which has high-income country status, this group comprises low or high middle-income countries.

<sup>2</sup> See Skills for the Future: Managing Transition – conference conclusions: [www.etf.europa.eu/en/publications-and-resources/publications/skills-future-conclusions](http://www.etf.europa.eu/en/publications-and-resources/publications/skills-future-conclusions)

<sup>3</sup> See [www.etf.europa.eu/en/projects/skills-lab](http://www.etf.europa.eu/en/projects/skills-lab)

<sup>4</sup> See [www.etf.europa.eu/en/news-and-events/news/understanding-skills-demand-changing-world](http://www.etf.europa.eu/en/news-and-events/news/understanding-skills-demand-changing-world)

articles should be seen as a basis for discussion and further research rather than as definitive responses to the issues they address.

## Publication structure

This publication is divided into three parts. **Part I** consists of two editorial articles written by the ETF as an introduction to the debate. They present an overview of global and regional trends.

- **Article 1** reviews existing studies on the future of work and skills at the global level and summarises seven broad trends shaping labour markets and demand for labour, using evidence taken mostly from advanced economies. Although similar general trends can be detected everywhere, the nature and extent of their development vary from country to country. Thus, this article also discusses the main factors that may explain the appearance of different influences across various countries, and includes a section on demands for skills that run counter to the general flow of change.
- **Article 2** focuses on region-specific transformations observed in the European neighbourhood countries, which are mostly high or low middle-income countries. It presents a systematic review of the recent economic and labour market trends in the ETF partner countries, and provides a background analysis for the articles that follow.

**Part II** groups together six articles covering changes in occupations, sectors and employment patterns across a range of countries.

- **Article 3** attempts to quantify the risk of automation faced by workers in the urban areas of Armenia, Georgia, Moldova and North Macedonia, estimating the proportion of jobs at high, medium and low risk of automation. The results provide evidence for job polarisation and automation as well as the need for upskilling and reskilling – more so in Moldova and North Macedonia than in Georgia and Armenia.
- **Article 4** goes on to forecast sectoral and occupational labour demand in North Macedonia for the year 2030. Results suggest a shift in employment towards occupations and sectors requiring medium- and high-level skills, a trend which is likely to aggravate the current skills shortages.
- **Article 5** presents another attempt to identify the jobs that are most ‘at risk’ of automation through task- and skills-based analysis at the regional level, focusing on Istanbul and North Macedonia. These results were then complemented by a search to identify a number of possible ‘safe’ jobs for those at risk, focusing on certain occupations where the transition process could be relatively easy.
- **Article 6** looks at the main determinants of labour demand in the growing ICT services sector across different income country groups, highlighting the case of Israel in particular. The analysis confirms a positive contribution of ICT services exports to employment in the ICT service sector, with beneficial effects noted especially for the presence of women in the workforce. The last two articles of Part II are specifically focused on changes observed in the employment patterns and working conditions in Serbia.
- **Article 7** analyses the socio-economic position and status of digital workers on global platforms from the perspective of ‘decent work’. The study confirms that most Serbian digital workers are highly educated individuals commanding decent wages, but that their employment status is far from clear. Similarly,
- **Article 8** looks at the working conditions of drivers for Car:Go – a Serbian platform-based ride-hailing service with a unique business model – and finds similarities with other global platform workers.

**Part III** of the publication gathers together a further five articles covering changing demand in different skills sets and qualifications across several neighbouring countries.

- **Article 9** starts by looking at the incidence of skills mismatch in a number of countries (Serbia, Montenegro, North Macedonia, Moldova, Georgia, Egypt and Morocco) in the context of the changing dynamics within economies and societies, notably, for example, sectoral shifts, occupational changes, demographic movements, education-related factors and individual preferences. Despite the complexity of the data collection and measurement process, the results show a high incidence of skill mismatch in transition countries.
- **Article 10** explores the changes in both job content and education and skills demands for entry-level jobs in the retail banking sector in Lebanon. Through conducting interviews with both employers and employees, the author documents the move towards raising the skills sets and education levels required to work in this sector, and highlights the recruitment strategies devised to achieve this.

- [Article 11](#) uses non-traditional web data and analyses the online job vacancies published in a particular portal in North Macedonia. The results show that ‘professionals’ are the most requested type of employee among all occupational groups, followed by ‘service and sales workers’ and ‘technicians and associate professionals’. A comparison of the web-based results with more traditional survey-based data points to significant discrepancies in demand for the same occupational groups – a finding that could be explained by a variety of factors.
- [Article 12](#) takes and modifies the EU’s Smart Specialisation approach and applies it in the skill needs analysis of the renewable energy sector in Moldova and health tourism in Montenegro. The approach encourages each region to identify local strengths and assets and develop its own competitive advantages through a bottom-up, inclusive dialogue among local authorities, academia, business and civil society. The article argues for the need to integrate vocational education skills analysis within the smart specialisation approach, as all sectors need both high and medium-level technical skills. Finally,
- [Article 13](#) analyses the extent and nature of digital skills gaps and mismatch in the labour markets of the Western Balkans. It provides evidence of a general shortage of job applicants with ICT qualifications, combined with an oversupply of graduates from other fields of study. Without a change in the policies related to the provision of higher education, this skills gap is likely to persist into the future.

The ETF hopes that the findings presented here will inspire further discussion and research to help those working in the fields of skills assessment and skills development processes to meet the needs of tomorrow’s labour markets, economies and societies. Armed with such knowledge, individuals and companies can take well-informed decisions, while at the same time, grounded in empirical evidence, education and training policy can be reshaped to take future trends into account. Drawing out the implications of skills demand analysis for policy and practice can be a challenge, yet this process is at the heart of reforming national education and training systems, as well as developing and updating occupational and qualification standards and definitions, employment strategies, active labour market programmes and migration policy. Achieving success in these areas depends on creating a shared path and goals to improve human resources and respond to future skills needs, while at the same time reconciling the interests of a number of different parties (companies, workers and public institutions, among others).