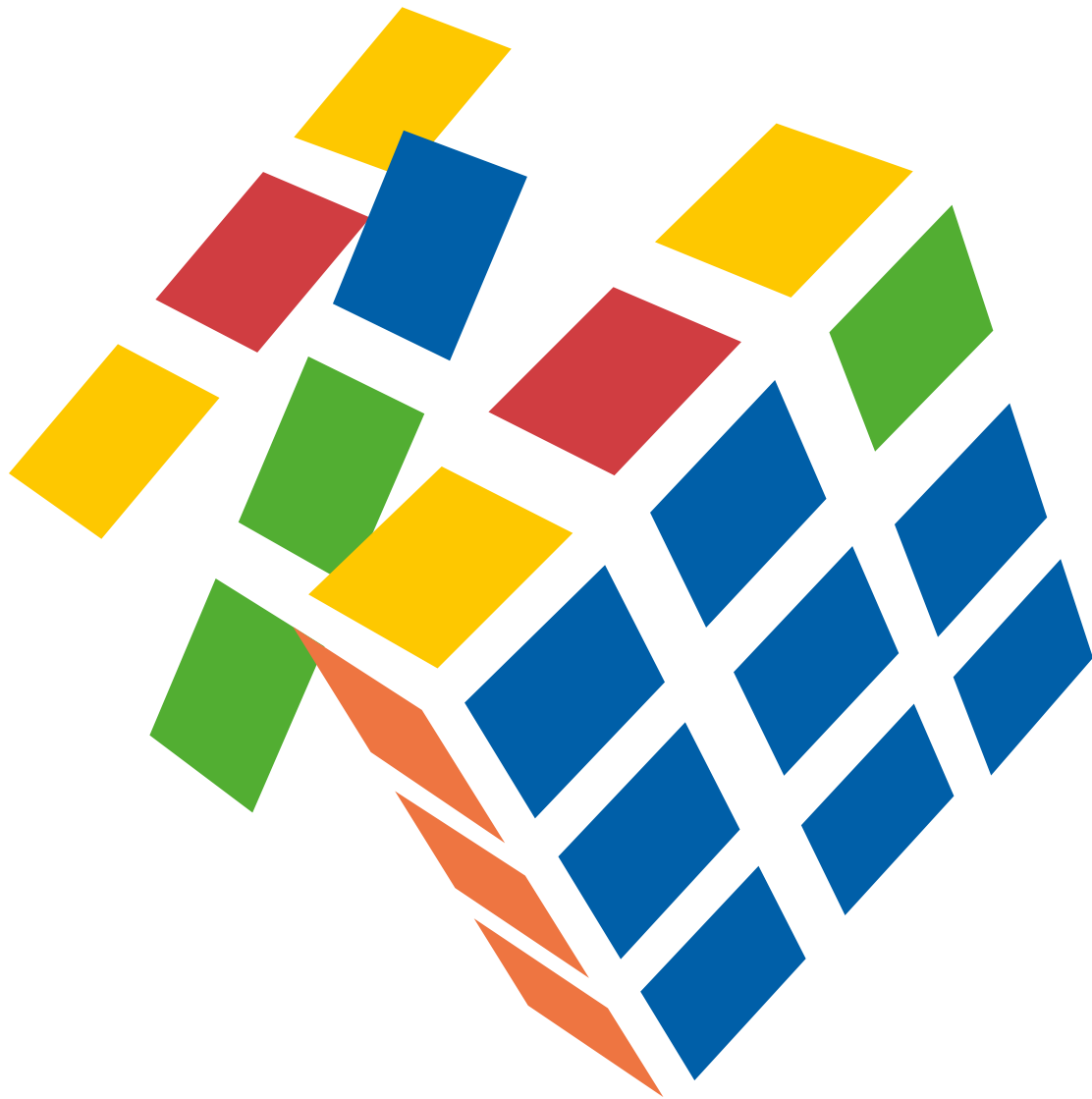




CEDEFOP

European Centre for the Development  
of Vocational Training

EN



# 2023 skills forecast Croatia





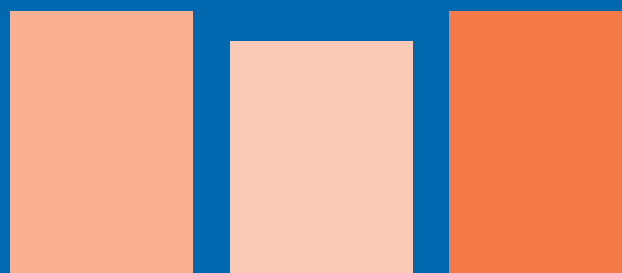
Employment in 2035

1 717 000

1.29%

increase 2021-35

% Employment growth 2021-35



- 2021-25
- 2021-30
- 2021-35

Fastest-growing sectors

2021-35% growth

37%

Real estate, professional, scientific & technical activities

34%

Information & communication

Total job openings, 2021-35

1 180 000



- Replacement needs (98%)
- New job openings (2%)

Highest-demand occupations

Largest creation of new jobs, 2021-35

16 000

Science & engineering professionals

14 000

Legal, social & cultural professionals

13 000

Information & communications technology professionals

increase in high-skilled labour demand 2021-35

30%

Total job openings by skill level 2021-35



- High-skilled non-manual occupations (46%)
- Skilled non-manual occupations (23%)
- Skilled manual occupations (21%)
- Elementary occupations (9%)



3.4%

employment increase in 2021-35



Fastest growing occupation  
Legal, social and cultural professionals



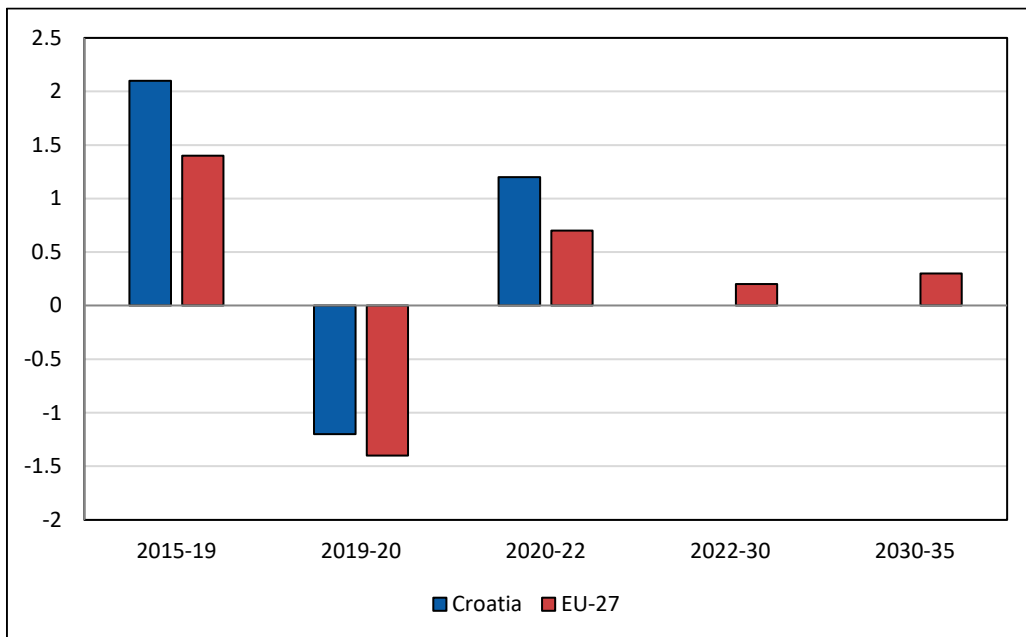
Fastest growing sector  
Information and communication

# Cedefop skills forecast: Croatia

## 1. Employment outlook

Employment in Croatia is forecast to remain static over the forecast period. Figure 1 shows that employment in Croatia grew faster than the EU-27 average over 2015-19 and fell slightly less sharply in 2020 as the Covid-19 pandemic hit. Employment in Croatia is also estimated to have bounced back more strongly than the EU-27 over 2020-22. However, total employment in Croatia is forecast to remain static over 2022-35, compared with growth of around 0.2-0.3% pa for the EU-27. The stagnating growth is likely the result of unfavourable demographic developments.

Figure 1. Annual percentage employment growth in Croatia and the EU-27, 2015-35



Source: Cedefop (2022 Skills Forecast).

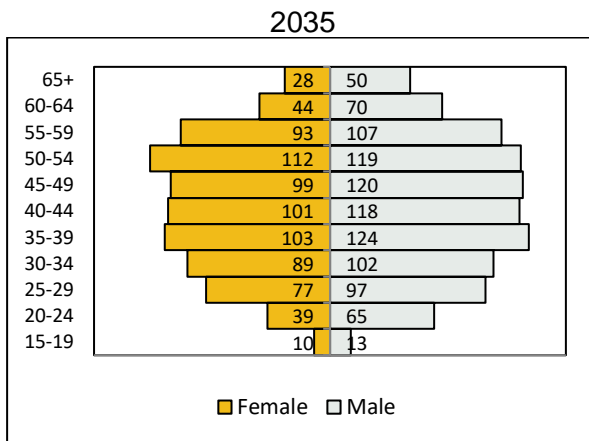
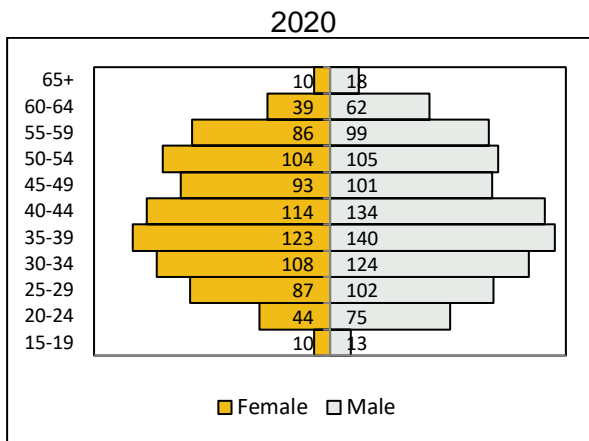
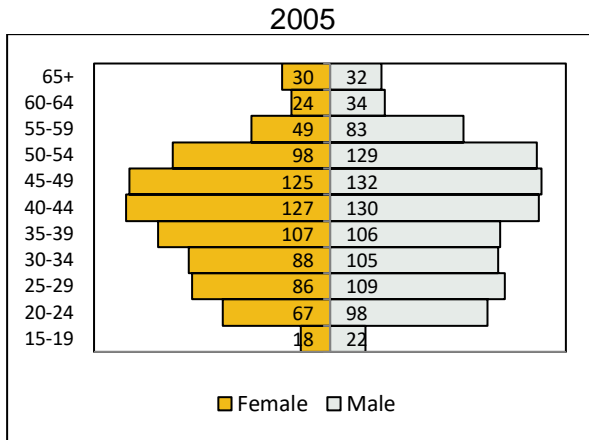
## 2. Labour force overview

Figure 2 shows the labour force by age group in Croatia in 2005, 2020 and 2035. Changes in the labour force in Croatia over the forecast period will continue to be driven by the ageing population and increasing participation rates in most age groups. The total labour force in Croatia is projected to fall by just under 1% over 2020-35, compared to a slightly smaller decline, of around 0.5%, over the previous 15 years. It compares with an expected increase in the labour force of just under 3% over 2020-35 for the EU-27. The total participation rate in Croatia is forecast to increase by 3 pp over 2020-35, compared with an increase of 1 pp in the total rate for the EU-27. Total population is forecast to fall by around 6.5% over 2020-35, compared with a fall of 4% over 2005-20.

Population in all age groups in Croatia, except those aged 65 and above, is forecast to decline during 2020-35, reflecting trends in the relevant younger cohorts in preceding periods. The participation rates of all age groups in Croatia are forecast to grow over 2020-35, with particularly strong (13 pp or more) increases projected for those aged 45-64.

The pattern of changes in population and participation rates by age group for males and females is such that the male overall participation rate is forecast to increase by 4 pp over 2020-35, while the female participation rate is projected to increase by 2 pp over the same period.

Figure 2. Distribution of the labour force (thousands), 2005-35

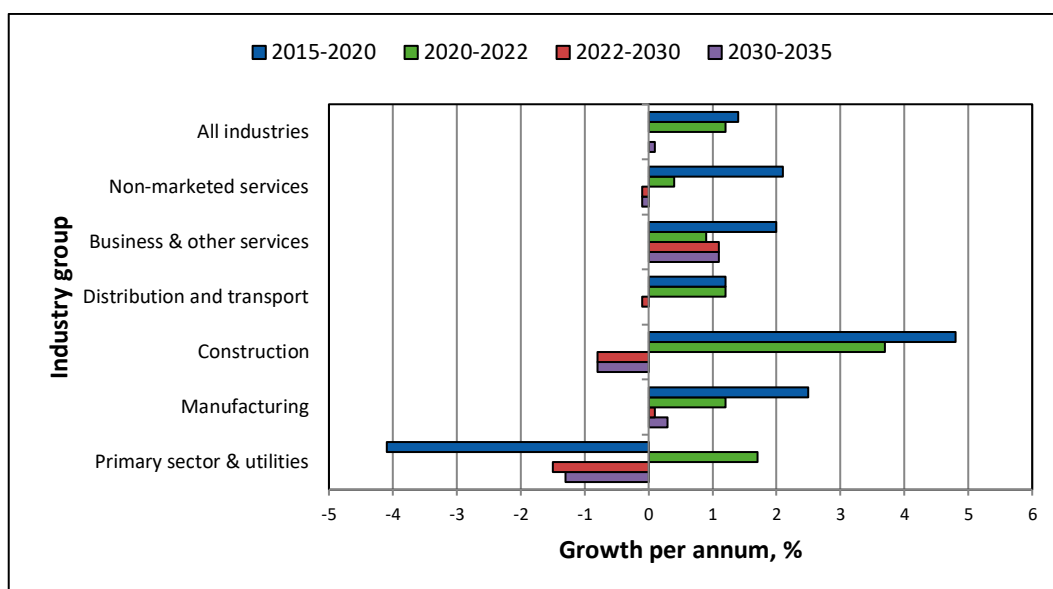


Source: Cedefop (2022 Skills Forecast).

### 3. Sectoral employment trends

Figure 3 shows annual average employment growth by broad sector in Croatia between 2015 and 2035. Although total employment in Croatia is expected to remain static over the forecast period, employment in *Business & other services* is forecast to grow relatively strongly, by just over 1% pa over 2022-35. *Manufacturing* is the only other broad sector that is forecast to see some employment growth over the period, although the growth is forecast to be weak. *Construction* and *Primary sector & utilities* are forecast to see the strongest overall declines in employment, falling by around 0.8% pa and 1.5% pa, respectively, over the whole forecast period.

Figure 3. Employment growth by broad sector of economic activity, 2015-35



Source: Cedefop (2022 Skills Forecast).

In terms of sub-sectors (i.e. below the level of the six broad sectors discussed above), growth in *Business & other services* is forecast to be driven by growth in *real estate activities, architectural & engineering services, telecommunications, market research & other professional services* and *other service activities*, all with a growth of 1% pa or more over 2022-30. Within *Manufacturing*, employment growth is forecast to be driven by *coke & refined petroleum, other machinery & equipment, other chemicals, optical & electronic equipment, electrical equipment* and *other transport equipment*, all sub-sectors with a growth of 1% pa or above. Within *Primary sector & utilities*, only *electricity* is forecast to see positive employment growth, while employment in *agriculture*, which accounted for 6% of

total employment in Croatia in 2020, is forecast to see a fall by more than 2% pa over the whole of the forecast period.

## 4. Job openings by occupational group

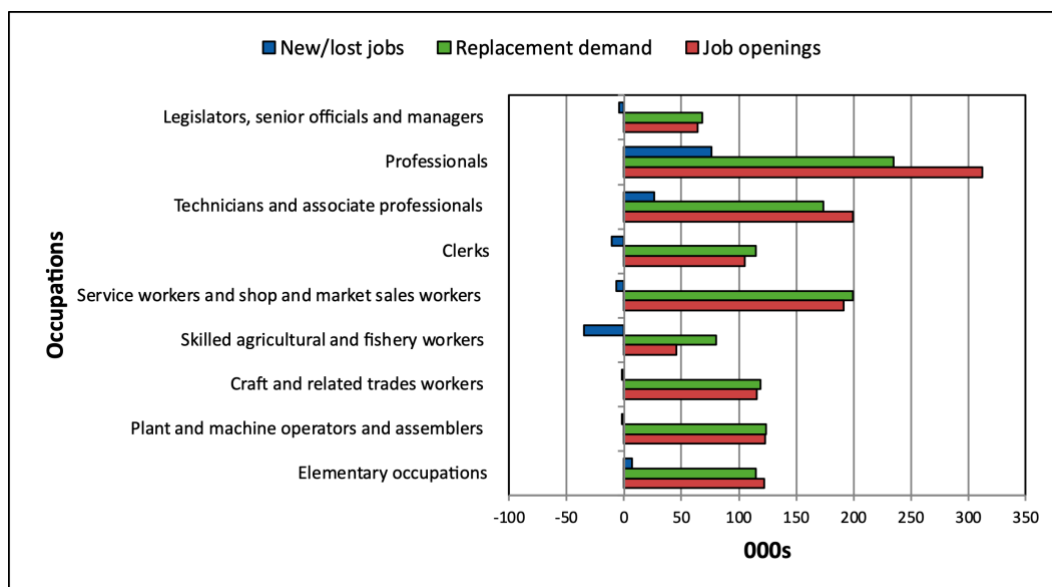
Cedefop skills forecasts estimate the total job openings by occupational group as the sum of net employment change and replacement needs. Net employment change refers to new jobs created or jobs lost due to the expansion or contraction of employment in that sector or occupation. Replacement needs arise as the workforce leaves the occupation due to retirement or career changes. Replacement needs, generally, provide more job opportunities than new jobs, meaning that significant job opportunities arise even in occupations declining in size (i.e. agricultural workers are a typical example, as ageing workers employed in the sector will need to be replaced).

Figure 4 presents the total job openings by broad occupational group over 2020-35. The number of job openings is determined by the number of jobs lost/newly created and by the number of jobs that need to be filled following the retirement of older workers or the movement of workers to other occupations. Most jobs will come from this need to replace workers retiring or changing occupations.

Among the broad occupations, only *Professionals* and *Technicians & associate professionals* are forecast to see a relatively strong increase in jobs over this period, with the rest forecast to see only very slow growth or a decline. However, all broad occupations are projected to see fairly substantial replacement demand. *Professionals* are forecast to see the greatest expansion of jobs, as well as the greatest replacement demand. In total, the number of jobs is forecast to increase by only 42,000, while replacement demand is projected to be 1.2 million.

At a more detailed level, most job openings (taking both new/lost jobs and replacement needs together) are generally expected to be in high skilled non-manual occupations such as *teaching professionals*, *legal, social & cultural professionals*, *business & administration associate professionals* and *science & engineering professionals*, each of which are expected to account for 5% or more of all job openings. The skilled non-manual occupation of *personal service workers* is also expected to see many job openings due mainly to replacement demand. Similarly, the skilled manual occupation of *drivers & mobile plant operators* is expected to see many job openings, despite a slight contraction of total jobs. Among *Elementary* occupations, the number of job openings is generally expected to be lower, although still positive, with a contraction in total jobs for some occupations, such as *labourers*, combined with lower replacement demand.

Figure 4. Job openings by broad occupational group, 2020-35



Source: Cedefop (2022 Skills Forecast).

## 5. Drivers of occupational change

Within the Cedefop skills forecast, future employment growth (or decline) of occupations is further broken down by separating national economic components from regional industrial and economic effects, helping to interpret what is driving the change. From this perspective employment growth can be explained by three possible drivers: (a) overall trends of the economy (i.e. growth or decline), (b) shifts of employment between sectors and (c) changes in the occupational structure within sectors (i.e. factors making some occupations more important than others).

In the next decade, changes in the occupational composition of employment in Croatia are expected to be driven by changes in the level of specialisation within occupations and, in fewer cases, by changes in industry size. Stronger occupation-specific and industry effects will increase the shares of *professionals* and *legislators, technicians and other associate professionals*.

The increase in industry size has a noticeable positive impact, alongside a positive but more modest occupation effect, for *science & engineering professionals*. High-skilled occupations are expected to increase overall. The occupations that can benefit the most from these trends are, for example, *health professionals, science & engineering professionals*, and, in particular, *legal, social, cultural & related associate professionals*.



Therefore, the overall effect of occupational change depends on several factors that need to be considered together. Moves towards a service-oriented economy, also within manufacturing, along with increasing automation and digitisation, will lead to greater use of higher-level occupations at the expense of low-level and some medium occupations. All lower-level occupations are expected to decrease. Intermediate occupations will experience an overall decrease. Among the medium-qualified occupations becoming stronger are *Assemblers, handicraft & printing workers*. Among the occupations that will suffer the most is the group of *Agricultural workers*.

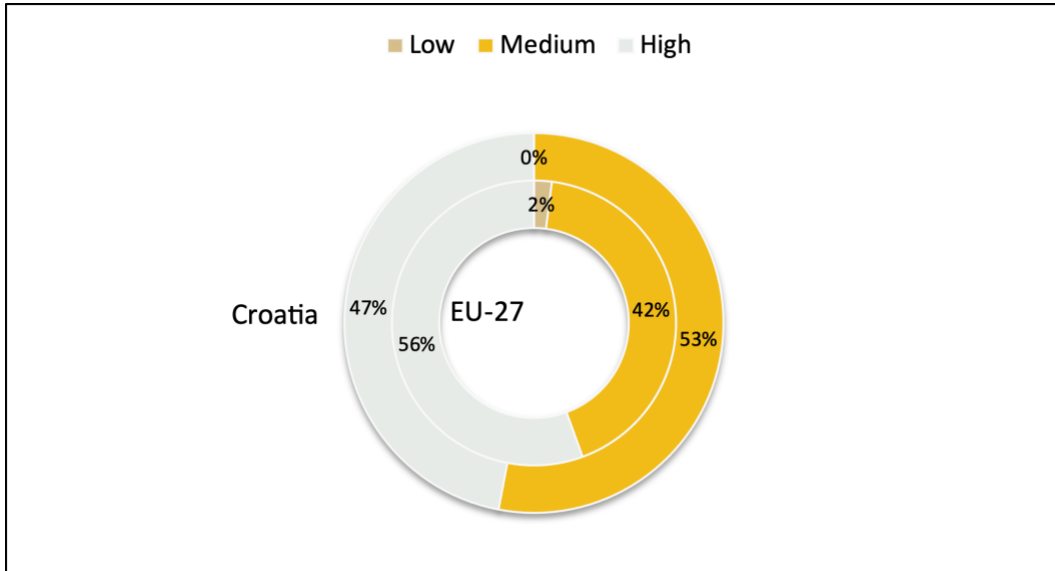
## 6. Demand for and supply of skills

Within the Cedefop skills forecast, skills are proxied by the highest level of qualification held by individuals in the labour force and in employment. Three levels are distinguished, high, medium, and low, which correspond to the official ISCED classification. The occupational group also offers an indication of the skill level required, as some occupations (e.g. professionals) typically require high-level skills, while some others (e.g. elementary) typically require only basic ones. Therefore, occupational groups are also linked to a skill level.

In Croatia, over 2022-30, more than half of job openings (53%) are expected to require a medium qualification, while the other half require high level qualifications (47%; see Figure 5). At an aggregate level, replacement demand for workers with low level qualifications is expected to be lower than the decline in the number of jobs requiring low level qualifications. However, this does not mean that there will not be opportunities for workers with low level qualifications in some occupations and sectors. As in many other countries, Croatia experiences a strong increase in educational attainment. This move towards (intermediate) and higher qualifications did not go hand in hand with the creation of work requiring the level of qualification. Over-education, thus employment below the level of the qualification attained can thus be observed. In essence, demand for lower qualified would exist but is often filled with intermediate and higher qualified, which is reflected in the forecast.

Compared with the EU, in relative terms, Croatia is projected to see fewer job openings requiring high qualifications and substantially more requiring medium qualifications than the EU-27 average.

Figure 5. Shares of total job openings by level of qualification, 2022-35



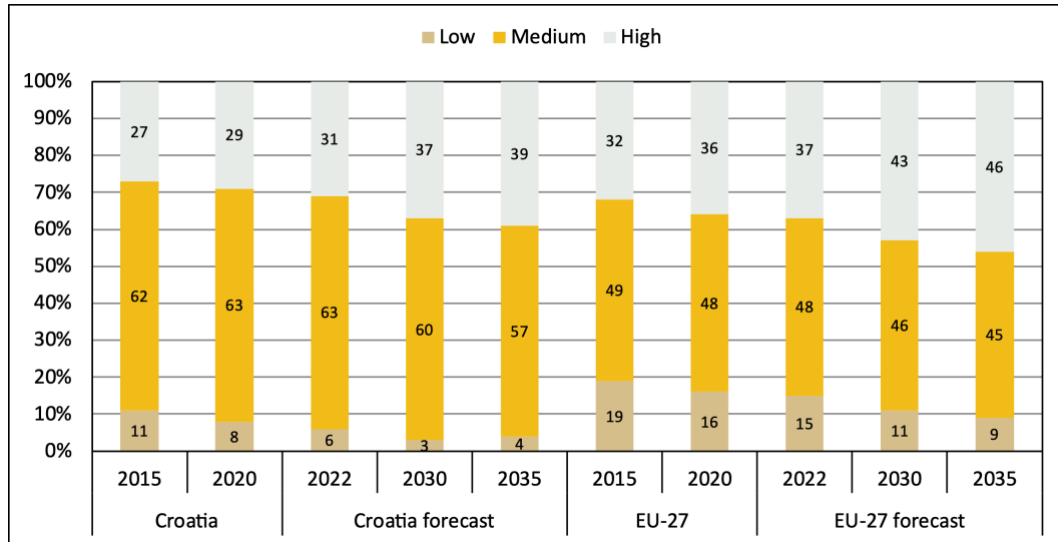
Source: Cedefop (2022 Skills Forecast).

Future labour supply trends depend on the size of the working age population (defined as aged 15 or older), the labour market participation rates, and the extent to which people acquire formal qualifications.

Figure 6 shows the expected development of qualification shares in the labour force in Croatia and the EU-27. Croatia is slowly increasing its share of higher qualifications in the labour market. While the share was 31% in 2022, it is expected to increase to 39% by 2035. The share of medium qualified in the labour force is expected to decline over the forecast period, from 63% in 2022 to 57% in 2035.

The share of lower qualified workers is expected to fall from 6% in 2022 to 4% in 2035. Relative to the EU-27 averages, while the development of the labour force qualification mix in Croatia is following those of the EU averages, it maintains a predominance of medium qualified workers.

Figure 6. Labour force share by level of qualification, 2015-35

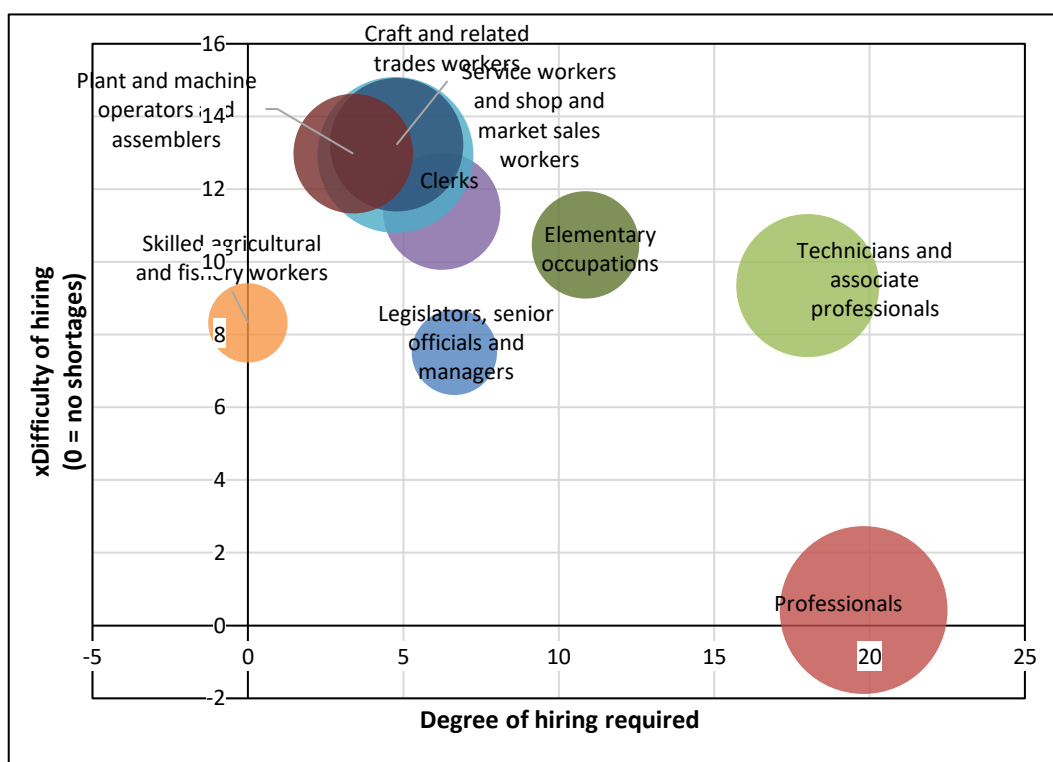


Source: Cedefop (2022 Skills Forecast).

The Cedefop forecast implies an increasing labour force shortage with the required skills in Croatia, especially among the intermediate and lower qualified, while the supply of higher educated is forecast to fill the demand sufficiently.

Figure 7 shows an indicator, *difficulty of hiring*, whose aim is to approximate shortages of supply by qualifications and its impact on occupations. This measure, shown along the vertical axis, indicates increasing difficulties to fulfil demand given the available supply of qualifications used in the occupation. Along the horizontal axis, the *degree of hiring required* in the occupation is depicted. Higher values indicate that to reach the forecast result that occupation will need to adjust more (in terms of workers with particular qualifications) relative to the base year (2022) levels. These changes (degree of hiring required) can be due to a change in the qualifications required or increases in the number employed. The size of the bubble indicates the *overall employment level*, bigger bubbles indicate more employment while smaller bubbles less employment. Occupations with both a high *degree of hiring required* and a high *difficulty of hiring* (i.e. towards the top right of the figure) are likely to have the most difficulties in achieving a suitable workforce.

Figure 7. Indicators of future hiring difficulties, 2022-35



Source: Cedefop (2022 Skills Forecast).

Note: Indicators were calculated at the level of the underlying 2-digit occupation groups. Aggregation was based on the employment weights within each 1-digit occupation group.

Low level occupations such as *Elementary occupations*, are expected to experience high levels of hiring difficulties in the next ten years (Figure 7). These go alongside medium levels of change expected in qualifications required, and thus a medium degree of hiring required, within *Elementary occupations*, but with low levels of hiring required for *Skilled agricultural & fishery workers*. While *Professionals* and *Technicians & associate professionals* in Croatia are expected to have lower hiring difficulties, they also show a high degree of hiring required over the forecast period. A low degree of hiring required and modest hiring difficulties can be found among *Legislators, senior officials & managers*.

A more detailed analysis of projections for *Professionals* in Croatia (not shown) reveals that hiring difficulties might be reasonably low for all occupations within the group. However, the required hiring degree is expected to differ substantially from occupation to occupation.

## Cedefop methodology

The Cedefop Skills Forecast offers quantitative projections of future trends in employment, by sector of economic activity and occupational group. Future trends in the level of education of the population and the labour force are also estimated. Cedefop's forecast uses harmonised international data and a common methodological approach allowing cross-country comparisons between employment trends in sectors, occupations and qualifications. The forecast and methodology is validated by a group of national experts. The forecast does not substitute national forecasts, which often use more detailed methodologies and data, while they also incorporate in-depth knowledge of a country's labour market.

The latest round of the forecast covers the period up to 2035. The forecast takes account of global economic developments up to May 2022. The European Economy experienced a sharp downturn in 2020 due to the global pandemic, and partially bounced back in 2021. However, the strength of the recovery in the short term is threatened by global factors such as supply chain disruptions, the consequences of the war in Ukraine and high inflation.

The key assumptions of the baseline scenario incorporate the Eurostat population forecast available in May 2022 (Europop 2019) <sup>(1)</sup>, and the short-term macroeconomic forecast produced by DG ECFIN in May 2022 <sup>(2)</sup>. Several revisions to the data affect the Cedefop Skills forecast 2022, when compared to the 2019 update. For example, the population projections used in the 2022 update are generally more pessimistic than those used in the 2019 update (i.e. Europop 2015), with a corresponding impact on labour force figures. The source of historical labour force data is the European Labour Force Survey, which in 2021 underwent important methodological changes causing a break in the time series for several variables, including labour force. As a consequence, in many Member States the participation rates in 2021 are noticeably above/below historical trends, which causes the Cedefop Skills forecast 2022 to be revised in the same direction, compared to the 2019 update. Moreover, some Member States experienced significant revisions in the historical data series for sectoral employment from the National Accounts.

The Cedefop Skills forecast 2022 is made consistent with the objectives set by the European Green Deal by incorporating suitable assumptions in terms of additional investment, power sector technologies, energy balances and carbon pricing.

Energy and commodity price forecasts from the World Bank and the IEA are used as inputs to the Cedefop Skills forecast, which therefore incorporate the recent surge in prices.

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(1) <https://ec.europa.eu/eurostat/web/population-demography/population-projections/database>

(2) [https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2022-economic-forecast\\_en](https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2022-economic-forecast_en)

For the latest update and access to more detailed Cedefop skills forecast data visit our [Skills forecast project page](#).



For more details, please contact Cedefop's Skills Forecast team at: [Skills-Forecast@cedefop.europa.eu](mailto:Skills-Forecast@cedefop.europa.eu)