

European Training Foundation

SKILLS DEMAND AND SUPPLY IN NORTH MACEDONIA

An analysis at regional and local levels



Report drafted by Prof. Blagica Novkovska for the European Training Foundation.

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ACKNOWLEDGEMENTS

This report was prepared for the European Training Foundation (ETF) by Professor Blagica Novkovska, researcher and local consultant, as part of the support given by the ETF to the national authorities of North Macedonia in conceptualising and establishing regional centres for vocational education and training (VET).

It presents the findings of research carried out from April to August 2019. These findings were presented to the country stakeholders in a workshop on regional VET centres held on 9 July 2019 in Skopje, at which key counterparts from North Macedonia were invited to comment on the draft report. ETF specialists Cristina Mereuta, Filippo Del Ninno, Mircea Badescu and Stefan Thomas reviewed the draft paper and provided comments and suggestions.

The ETF and the local consultant thank the Ministry of Labour and Social Policy, the Employment Service Agency and the State Statistical Office of North Macedonia for sharing data and processing additional indicators, and for providing advice and insights regarding forecasting and other aspects of labour demand identification. Thanks also go to the other stakeholders consulted for this research: the Ministry of Education and Science, the VET Centre, the Adult Education Institute, vocational schools, municipalities (including local economic and social councils) and companies from the three selected regions, organisations of employers and chambers of commerce.



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EXECUTIVE SUMMARY

The ETF conducted this skills demand and supply analysis in 2019, to inform the conceptualisation of regional vocational education and training (VET) centres in North Macedonia, envisaged as important actors in improving the links between educational offer and labour market demand within the national strategic framework for education. The report focuses on three regions of North Macedonia – South West, Polog and North East. In addition, this analysis complements another ETF-supported research project, which focused on VET and adult education in the three regions, covering enrolment, education programmes, teaching staff, infrastructure and development challenges and opportunities.

The issue of the connection between supply and demand is important in North Macedonia, bearing in mind that, for several decades now, unemployment and inactivity rates have remained high. Differences among the regions in the country with respect to employment opportunities and joblessness risk making the issue even more complex. The regional contexts and characteristics affecting the labour market in connection to skills supply are particularly highlighted in this report.

This paper presents the results of a detailed analysis of labour market and skills demand in three regions (South West, Polog and North East). It analyses current trends in employment by economic sector and region and forecasts future values in order to estimate skills needs in the medium to long term. The analysis captures the labour market situation, skills demand and supply aspects and economic trends before the Covid-19 pandemic.

Data from official sources, both existing and produced on request through additional processing, provided the basis for the calculations and analysis reported here. As identified during the execution of the research, data on employment by sector and region were of particular importance. This information was obtained with a high degree of precision by the additional processing of data from the State Statistical Office (SSO) and the Employment Service Agency (ESA). Thus, the research combines various sources of data (i.e., surveys and administrative data collection) to obtain accurate and particularly insightful labour market information.

In addition, the analysis used data collected through an ad hoc survey with relevant groups or respondents – namely ESA (the central office and local employment offices), municipalities, companies, employers' organisations and chambers of commerce – aimed at gathering further information on specific issues relevant for matching supply and demand.

The research was carried out to a high degree of complexity, in particular in relation to the gathering of insights on skills demand and supply at the regional and local levels. Valuable information could be obtained by extending such research efforts to the remaining regions of North Macedonia, as well as updating the regional analysis already undertaken over a period of years.

The ETF hopes that the methods tested and indicators processed in the course of this study can further inspire national stakeholders and researchers in future endeavours of skills supply and demand analysis from a sub-national/regional perspective.

In summary, the research findings signal a number of priorities for action to be considered by national decision makers and stakeholders, in particular in implementing major education reforms, such as the establishment of regional VET centres, or promoting employment and regional economic development initiatives.



The first priority for action is to enhance the provision of skills development programmes, be it in initial or continuing education and training, to match expanding sectors and the needs of learners at regional level. Diverse regional dynamics, in terms of growing or declining sectors, specific socio-economic and employment factors and other aspects (e.g. investments, connectivity), call for a more flexible and regionally relevant education offer, in particular in the VET area.

The second priority is to consolidate and expand stakeholders' cooperation at local and regional levels, and to consider the role of the regional VET centres in promoting stronger collaboration with the private sector, social partners and other relevant actors, such as investment, development or innovation agencies, academics, and non-governmental organisations.

The third priority is to enhance evidence-based decision making when planning the education offer or measures to support transition from school to work through embedding regular analyses of skills supply and demand at regional and local levels into the labour market and skills information system.



INTRODUCTION

The European Union (EU) provides support to North Macedonia in the area of education and skills reforms. As an EU agency, the European Training Foundation (ETF) was requested to provide technical advice to the Ministry of Education and Science and other stakeholders on the conceptualisation of regional vocational education and training (VET) centres.

The Government of North Macedonia has adopted a new National Education Strategy (2018–2025), and a number of priorities and measures aim at making VET more relevant and efficient.

- Priority 1.4 The VET system is continuously informed about the current demands on the workforce and the qualifications and skills needs which will be used to inform VET policy development.
- Priority 2.1 The efficiency and effectiveness of the VET system are improved in terms of expenditure and relevance to the local, regional and national labour markets.
- Priority 2.8 The efficiency of VET reforms is ensured through the centralisation of investment and the concentration of results.

The strategic framework includes a commitment to reform the structure of VET provision through the establishment of regional VET centres. This initiative is sequenced in several steps, the short-term goal being the establishment of three regional centres by 2020.

Decisions regarding the establishment of regional VET centres require labour market data and information on skills trends relevant to the local and regional contexts. This report reflects the main findings from an analysis of skills demand and supply in the South West, Polog and North East regions of the country, where the first regional VET centres will be established. The paper also summarises the key methodological elements for the future replication of similar skills supply/demand analysis in the other regions of the country.

This analysis describes the current and future skills demand in the three regions under examination by exploring the growth potential of a number of sectors at the regional and, where feasible, sub-regional (municipality) level, in the light of socio-demographic developments, and calculates any current skills gaps or surpluses. It takes into account current skills stocks (size of age cohorts, etc.) and trends in education choice. It also provides a forecast of skills needs (quality and quantity) in the medium to long term, which will permit the calculation of any potential skills deficit.

The report utilises existing labour market information from a number of sources, including the State Statistical Office (SSO), the Employment Service Agency (ESA) and specific analyses of employers' needs. It gathers additional insights on skills demand and supply problems at the municipal level to produce a reliable description of economic needs and social context in the three regions under review.

This research was coordinated with a parallel assessment led by the ETF that focused on the capacity of VET providers (initial VET and continuous training) in the three regions. That assessment investigated and proposed scenarios in which the quality, quantity and mix of skills offered by vocational schools and adult education providers could be better aligned with labour market and social needs.

The labour market in North Macedonia presents a rather complex subject for investigation, due to various internal and external factors that influence the high unemployment rate, an extended hidden economy (Novkovska and Dumičić., 2018), the risk of poverty (Hutton and Redmond, 2013) and intensive youth migration.



Skills mismatch parameters require particular attention in the analysis of the labour market, as they measure the relationship between skills supply and demand (Kupets, 2015a). With reference to skills mismatch, an ETF analysis (2019) looks at its incidence using the following indicators: unemployment rate, unemployed/employed ratio, young people not in employment, education or training (NEETs), and the incidence of over-education and under-education. The extent of over-education and under-education disaggregated by the main occupation groups provides information on vertical mismatch, and, as in other Western Balkans countries, the incidence of over-education (ISCED 3–4). In related workers (ISCED 5–8) is higher than for those with a medium level of education (ISCED 3–4). In related reports for North Macedonia (Nikoloski and Pechijareski, 2015), disaggregation of indicators is provided only at the highest level (major groups of occupations). It has been identified that in transition countries, including North Macedonia, similar incidences of over-education rates are similar in transition and mature market economies, the incidence of under-education is lower in the transition economies. Greater detail on education and job mismatches in selected transition countries, including North Macedonia (2019) and Kupets (2015b).

The issue of assessing, anticipating and responding to changing skills needs in South Eastern European countries was addressed by the ETF in 2016 (ETF, 2016). One of the key findings highlighted by that report was the need to combine various sources of data and information consistently and regularly when exploring the changing pattern of skills demand and supply. Offering an adequate response to the challenge of aligning education provision to the labour market requires a much deeper level of knowledge regarding labour market issues, with reference to various characteristics of skills mismatch, utilisation and reward (e.g. wage-setting mechanisms).

In order to improve the match between the skills produced by VET institutions and the needs of the final users (employers/companies), more specific information about the components of the labour market is required than is typically obtained through existing sources describing the general behaviour of the labour market.

First, a precise definition of the main labour market elements of both the supply and demand side is required. As regards the demand side, the situation seems clear, bearing in mind that the main 'consumers' of the workforce are companies. The motivation to hire workers is also clear in terms of the need for procuring the capability to ensure production. On the supply side, the situation is more complicated. Both VET and employment agencies (e.g. ESA) are involved in the process. Skilled workers as individuals also influence the supply/availability of skills (e.g. through personal traits, ambitions, expectations). VET institutions have a dominant role as providers of education services (Rusakova and Saychenko, 2019), particularly at the initial level. In the case of North Macedonia, many ESA activities complement the offer of VET institutions (such as providing training for particular skills with jobseekers as the key beneficiaries). Stronger cooperation among vocational schools, ESA offices, companies and municipalities can secure a closer match between the supply and demand sides of the labour market.

When analysing the connections between education (including VET) and the labour market, the presence of informal work and the hidden economy also requires careful consideration, although the research methods are somewhat limited.

This report includes three main chapters. Chapter 1 – Methodology – explains the tools and instruments used to carry out the quantitative and qualitative analyses and the data sources drawn upon, including their limitations, as well as the methods and assumptions used to perform the forecasting. This chapter also contains a summary of lessons learnt from the methodological



perspective and puts forward a number of actions that would help to improve data availability and accuracy. Chapter 2 – Skills demand and supply in selected regions – presents the key results of the data analysis, as well as the information gathered through interviews and a projection of skills requirements in the medium to long term. The third and final chapter concludes with the main takeaways from the analysis useful for the conceptualisation of regional VET centres and the identification of priorities in terms of economic sectors, education profiles and skills needs at the regional level.



1. METHODOLOGY

The research for this analysis employed both quantitative and qualitative methods. The main part of the quantitative analysis was performed using data from official sources, as described in the next section. The datasets were selected on the basis of the identified level of the data's quality. In some cases, datasets were not readily available and were obtained through the additional processing of existing data (e.g. by the SSO and ESA). This was particularly the case for collecting data on the number of employees by regions disaggregated by activity sector.

Complementary to the quantitative analysis, a local skill needs questionnaire was administered in order to obtain more detailed information and insights, and to confirm or supplement some of the findings from the quantitative analysis.

1.1 Overview of data sources used for quantitative analysis

SSO and ESA datasets were the main sources used for this research.

One of the most relevant sources was the SSO dataset reporting on the number of occupied posts and job vacancies by region with quarterly periodicity. A total of 8 156 vacancies was reported for the fourth quarter of 2018. The number of occupied posts for the same quarter was 497 443. Figures for job vacancies are derived from data reported by selected companies within the framework of the Job Vacancy Survey. Its accuracy is limited by sampling error and possible biases. Data were available at the regional but not the municipality level. Further disaggregation by activity sector, size of enterprise and main groups of occupations was also available.

It is important to provide a few conceptual and methodological clarifications regarding the vacancy monitoring.

- A vacant job may be a newly established paid position, or an unplanned or already existing work placement that will soon be released and for which the employer is taking active steps to find a suitable candidate. According to the definition used, the following types of vacancies were excluded: 'vacancies that are intended only for internal candidates of the unit, vacancies that are to be filled by unpaid trainees and fixed-term vacancies designed to be filled by persons from temporary employment agencies' (SSO, 2019a).
- 2. The Job Vacancy Survey in North Macedonia takes in around 4 000 companies: all large and medium-size enterprises are covered, while only a sample of randomly selected companies of other types are included.
- 3. Various ways of searching for workers were considered, including: notifying public employment services (i.e. ESA); contacting private mediation employment agencies; publishing vacancy announcements in the media (e.g., the Internet, newspapers, magazines); posting vacancies on a public bulletin board; and making direct contacts with potential candidates (including interviewing and selection) through paid interns.
- 4. Reported numbers were obtained as averages of the numbers of vacancies announced in active calls for applications for three given days the 15th of each month of a given quarter. A vacancy announced multiple times during the given period of three months was counted only once; thus, the repetition of calls for the same positions in the short term did not affect the results.

The labour force survey was also extensively used in this research, being the most exhaustive source of data for labour market analysis. In North Macedonia, it is published regularly with annual periodicity.



Disaggregation by region of the main indicators is also available. In addition, the structure of the survey allowed us to acquire, by additional processing, some other data disaggregated by regions. However, it is not feasible to obtain data disaggregated to the local level (municipality) using this source.

The most relevant data on demographic trends at the level of regions and municipalities are also available at the SSO. Data produced by the SSO can be retrieved by extracting them from their reports, as well as by browsing and searching through the MakStat database (SSO, 2019b), or are available on request for additional processing.

ESA data registers were also used in the analysis. The ESA website provides information on the registered unemployed for the period 2007–18, broken down by month. The number of those who were registered unemployed for the period 2003–18, disaggregated by month and by ESA employment offices, is also available, and these figures are further broken down by age group, education level, time elapsed since registration with ESA, and ethnicity. There is also a review of the transitions from and into formal registered unemployed status on a monthly basis. Data are disaggregated by education level and gender.

Additional sources of data derived from initial datasets were also used to assess labour market trends – for example, the forecast demographic indicators produced by the Ministry of Labour and Social Policy (MLSP) for the period 2006–30 (e.g. predicted values for the total population and disaggregation by age groups) and projections of the main economic indicators relevant for the labour market, based on the application of the Hermac model¹, and forecasted values of gross domestic product (GDP) by main groups of occupations from 2016 to 2025. An average GDP real growth of 3% (for the entire economy) has been estimated for the period under consideration. However, the results of this forecasting process have been to some extent affected by recent shocks in the national economy when the real GDP growth was close to zero (2017 and 2018), and it is expected that the average medium-term value will be around 2.5% from 2019 onwards. Thus, forecast data are to be used with care and future updating of the predictions of the main demographic, economic and employment data is recommended.

1.2 Qualitative analysis instrument

Although a significant amount of data from relevant sources was available regarding the main demographic and labour market characteristics, additional data and insights were necessary to develop this study. Therefore, an ad hoc survey (a local skills needs questionnaire) was specifically designed and implemented. Generally, the use of such surveys has both advantages and disadvantages in comparison to standard data sources, which must be taken into account when interpreting the results. Among the advantages of ad hoc surveys is the possibility of disaggregating the data to the appropriate regional/local level, covering all the parameters required for the particular study or application. The negative aspects of ad hoc surveys include the absence of the long-term series data required for reliable forecasting and limited comparability with similar data sources.

Nevertheless, ad hoc surveys can provide relevant data only if properly designed and linked to established high-quality official data for general characteristics relevant to the phenomena under study. In addition, a highly functional conceptualisation of questionnaires is required in order to secure further use with a given periodicity or integration into the collection processes of official statistics.

¹ The Hermac model is a tool for long-term forecasting of labour market trends in North Macedonia.



For the purpose of implementing this research and complementing existing data or introducing additional insights into certain aspects of skills demand, a 'local needs' questionnaire was developed and implemented in the selected regions.

The following target groups were covered in the three selected regions:

- active business entities (companies/employers);
- municipalities/local economic and social councils;
- organisations of employers and chambers of commerce; and
- the Employment Service Agency (ESA) including local employment offices.

The largest sampling frame was the group of active business entities. In order to define the sample of companies to be included in the survey, a table of active business entities by size, region and municipality was used (SSO, 2019c). In the selected regions, there was a total of 56 large active business entities (out of 559 in the country), plus 137 medium, 4 500 small and 14 876 micro companies. The aim was to broadly cover the large companies with this survey, while for the remaining businesses appropriate samples were used. All municipalities and organisations of employers/chambers of commerce were included in the survey. The trade unions represented in the economic and social councils were included in the survey too. The questionnaires were sent by e-mail to all respondents from the sample list. Responsible persons from the most significant respondents were contacted additionally by phone. For specific subjects, a number of site visits were carried out in order to collect more data and obtain additional information and clarifications of the issues raised.

Specific questionnaires were used for the survey, targeting employers; municipalities/local economic councils; and chambers of commerce and ESA.

The questionnaire for employers highlighted specific measurable issues in order to obtain as much quantitative information as possible to complement the data sources already available. In the case of the municipalities, chambers of commerce, ESA and organisations of employers, the emphasis was on gathering qualitative and descriptive information, as well as identifying their current activities, and the outputs produced related to the objective of linking education and training with labour market needs. These questionnaires were thus aimed at ascertaining the attitudes of these actors towards the existing challenges in the area of matching skills supply with demand.

The sample survey was conducted during the month of June 2019 by sending questionnaires to selected representatives of target groups, with a further subset being additionally contacted by phone or in person in order to motivate them to respond and to provide additional information. The representatives of different focus groups responded in various ways to the questionnaires. ESA units and organisations of employers/chambers of commerce responded exhaustively, while municipalities returned more partial answers. A much smaller number of employers responded to the questionnaire. Nevertheless, companies from all regions were represented in the sample of collected filled-in questionnaires.

Meetings with representatives of the Ministry of Labour and Social Policy, organisations of employers and chambers of commerce were also arranged in order to obtain additional information, as well as support for performing the field work undertaken alongside the questionnaire. Furthermore, as a result of the contact with the ministry, additional sets of data were provided for use in this analysis.



1.3 Assumptions used in forecasting

The report used the most relevant data available. Disaggregation to the maximum possible level was analysed (e.g. at the regional or sectoral level). Due to various external factors and internal changes, several complicated temporal patterns in relation to the indicators studied in this report were observed. Therefore, as a basis for forecasting, only short time series have been used (the last three years for which relevant official data were available).

Both linear and exponential forecasting had been considered in the initial phase. As determined by testing the results obtained by these two methods, exponential forecasting, in many cases, led to markedly unrealistic results. Thus, for the forecasting in the short, medium and long term, the linear forecasting method was used in all the cases presented in this report.

1.4 Lessons learned with regard to methodology

The research revealed extensive information on the value and limitations of the existing relevant data concerning the labour market. It was found that an extensive amount of data is available from several institutions. However, disaggregation to the lowest levels of territorial units and occupations is limited. Some disaggregated data can be obtained by additional processing, others can be estimated by projection, but still much more information is required in order to have sufficient data for planning educational activities according to labour market needs.

Additional information can be obtained using the questionnaires targeting the representatives of relevant groups such as companies or municipalities, as was done in the second part of this study. However, in order to obtain much more information from these surveys, a substantially longer period would be required, combined with an appropriate number of interviewers to undertake the field work.

The main lesson learned from this experience is that a study of this kind cannot rely only on the existing set of indicators relevant to the issue under examination, since many of those required are not available with satisfying reliability at disaggregated levels. Therefore, the main pillars of the study had to be those indicators that are produced regularly, with high quality, and whose mutual consistency is guaranteed by a harmonised methodological approach in terms of production.



2. SKILLS DEMAND AND SUPPLY IN SELECTED REGIONS

2.1 Key findings across the three regions

The specifics of the labour market for three regions of North Macedonia – South West, Polog and North East – have been explored and described in order to support the conceptualisation of regional VET centres. Underlying demographic and economic characteristics of the regions have been analysed at a level of detail appropriate to capturing accurately the labour market situation.

Using official data, the following can be deduced about the trends in population of the regions (as at 2018), whereas the Polog region reveals a stronger growth trend, while variations in the population in the other two regions are less significant (e.g. slight average annual growth in the North East region and a weak annual decrease in the South West region).

The total population of the Polog region is visibly bigger (about 320 000) than the average population of the regions in North Macedonia (about 260 000), while the other two regions considered here have populations that are markedly smaller than the average: 220 000 for South West and 176 000 for North East.

From the point of view of workforce composition, all three regions possess high potential to secure workers for the labour market. Thus, the percentages of the working-age population in these regions are markedly higher than the national average (around 70%): 73.3% for South West; 74.0% for Polog and 73.6% for North East.

The average annual figures for changes in population due to internal migration (between the regions in the country) are as follows: -107 for South West; -133 for Polog; and -166 for North East. All values are negative (showing higher emigration from than immigration into the region) and the highest figure is for the smallest region in size – the North East. No significant variation trend was observed.

Concerning international migration, an increasing trend is observed for the South West and Polog regions, while a decreasing trend is registered in the North East. Forecast values for net international migration for the year 2020 are as follows (persons per year): 535 for South West; 456 for Polog; and 62 for North East. Data on migration should be used with caution since there are indications that international emigration is substantially underreported.

The regional GDP per capita relative to the national level for the three regions is depicted in Figure 2.1. All three regions have a substantially smaller GDP per capita than the national average. However, the South West region is slowly progressing towards the national level; the Polog region remains at the same level of about half of the national rate, while the North East region is falling rapidly.





FIGURE 2.1 TRENDS IN NATIONAL AND REGIONAL GDP, 2011–17 (%)

Source: Own calculations based on SSO data

The unemployment rates in all three regions are higher than the national level. The variation trends for these rates are depicted in Figure 2.2. All unemployment rates show a marked decrease over time. However, in the regions considered here the unemployment rate will remain over 20%. The worst situation is expected to be that of the North East region where the unemployment rate will remain over 32%.



FIGURE 2.2 EVOLUTION OF THE UNEMPLOYMENT RATE AT THE NATIONAL AND REGIONAL LEVELS, 2012–20 (%)

Source: Own calculations based on SSO data



Variations are also visible in the salaries paid across the regions. The differences between the average net wages in the regions are much smaller than the disparities in the regional GDPs. Thus, for the Polog region, where the regional GDP per capita is about a half of the national level, the salaries are almost insignificantly lower (only 5%) compared to the national average. Average salaries are even slightly higher (about 6%) than in the South West region, even if the regional GDP in the South West region is 60% higher than in Polog. As for the North East region, the salaries here are substantially lower than those in other regions and at the national level (about 77% of the national level). This is comparable with the regional GDP disparities, in which the GDP for the North East region was observed as around 60% of the national level. Thus, in addition to having the highest unemployment rate, the North East region workers receive substantially lower salaries than those from the other two regions.

Job vacancies rates² also vary from one region to another. Thus, the average values for 2016–18 were 1.48% for the national level; 1.67% for South West; 1.05% for Polog; and 1.11% for North East.

Significant changes have occurred over recent years in the structure of employment by sector in the three regions. Thus, some sectors are declining steeply, while others are rapidly growing, as shown in Figures 2.3 and 2.4.



FIGURE2.3 FASTEST DECLINING SECTORS IN POLOG AND SOUTH WEST REGIONS

Source: Own calculations based on SSO data

² The job vacancy rate is the ratio between job vacancies and the sum of the vacant and occupied posts, shown as a percentage (source: SSO).



FIGURE 2.4 FASTEST GROWING SECTORS IN POLOG AND NORTH EAST REGIONS



Source: Own calculations based on SSO data

From the sectoral point of view, the situation varies enormously from one region to other. In the Polog region employment in the sectors of agriculture, forestry and fishing, along with education, are rapidly declining, while the number of people employed in the fields of manufacturing and accommodation and food service are growing rapidly. One of the fastest rates of decline is seen in the sector of transportation and storage in the South West region, while in the North East region one of the fastest growth areas is observed for the construction sector.

Thus, there are strong influences determining the main trends in employment in different sectors to be considered when planning the education offer in the various regions. The Polog region is characterised by the rapidly changing structure of its economy. Hence, the VET system needs to be adapted to provide appropriate skills for the labour market, and the framing of students' profiles changed in advance to match future needs.

As revealed in the qualitative analysis, the focus groups identified in this study (employers, ESA, organisations of employers/chambers of commerce and municipalities/local economic councils) show a strong interest in continuing to improve the link between education and employment. They are ready to make further efforts and to collaborate with vocational schools in order to provide better alignment between skills supply and labour market demand.

2.2 Analysis of data and information

Demographic factors

Demographic factors are of particular importance for the analysis of labour market supply and demand. The population of the country and its regional distribution and age structure determine the potential inflow of workers onto labour market. Migration is a key factor which strongly modifies workforce supply and should be considered in the analysis. The sections below include the main figures showing population and migration dynamics in the three regions studied (South West, Polog and North East), compared to the values at the national level.



Population by region

Table 2.1 presents the population variations for the three regions and at the national level from 2013 to 2017 (SSO). The South West and North East regions have comparable population sizes, while the Polog region is about 50% larger than the other two. The population in the South West region is slightly decreasing, while in the North East region is stable. Only, the Polog region shows an increase in population.

Year	National level	South West	Polog	North East
2013	2 065 769	220 199	318 458	175 863
2014	2 069 172	220 065	319 532	176 174
2015	2 071 278	219 718	320 299	176 231
2016	2 073 702	219 740	320 826	176 169
2017	2 075 301	219 663	321 573	176 260

TABLE 2.1 POPULATION BY REGION, 2013–17

Source: SSO

Population projections hold particular interest for this study in terms of forecasting labour market supply for the period under consideration (up to the year 2030). The differences between the regions have to be taken into account when proposing solutions for changes in VET appropriate to specific labour markets. Figure 2.5 depicts the differences between the regions in terms of the relative variations in the population (the forecasted population in a given year for a specific region divided by the population of this region in the year 2018). The population of the Polog region shows the strongest growth in comparison to the national level. The population of the North East region reveals a very gradual rise; an increase of about 0.5% is predicted to 2030. The population of the South West region is expected to decrease by about 0.8% to 2030.

FIGURE 2.5 FORECAST RELATIVE VARIATION OF THE POPULATION AT THE NATIONAL AND REGIONAL LEVELS, 2018–30 (%)



Source: Own calculations based on SSO data



Based on the above calculations of population dynamics, an increase in the working-age population is expected. However, more detailed analysis is required in order to accurately forecast the working-age population and subsequently the potential workforce supply. Figure 2.6 shows the distribution of population by age group for all three regions.



FIGURE 2.6 DISTRIBUTION OF POPULATION BY AGE GROUP IN THE SELECTED REGIONS

Source: Own presentation based on SSO data

Figure 2.6 reveals that the distributions by age groups vary substantially between the regions. While for the North East region, there is a relatively uniform distribution for the age range 14–64 years, in the other two regions significant peaks are observed. This is particularly the case in the Polog region where a sharp peak in the age range 30–34 years is observed. This is obviously the result of a high birth-rate in the past. For younger age groups a 'plateau' shape is observed at two-thirds of the peak level, close to the left edge of the working-age period (around 14 years). Compared with the previously observed spike in population, this plateau indicates a much slower inflow into the workforce than seen in the previous decade. Thus, it is expected that in the future a delayed effect in the ageing of the population compared to the other regions will be observed.

A similar pattern is observed in the case of the South West region, although with a less pronounced peak, also at the age group 30–34 years. It is also expected that for the next generations the inflow into the working-age group will be substantially lower than in previous years. A similar plateau is further observed as in the case of the Polog region. Therefore, in the South West region the increase of the working-age population in the future will also be smaller than in past years.

By contrast, the distribution of population by age groups in the North East region is more uniform. Therefore, it is expected that the inflow of potential new workers into workforce will be only slightly lower than in the past few decades.

Working-age population

When comparing the population of the regions from the point of view of the labour market, working age (15–64) is the main reference. Therefore, the working-age populations (as a percentage of the total population) for the three regions are presented in Table 2.2.



Year	National level	South West	Polog	North East
2013	70.75	73.27	73.74	70.62
2014	70.52	73.31	73.85	70.58
2015	70.35	73.35	74.06	70.59
2016	70.17	73.39	74.29	70.60
2017	69.86	73.27	74.16	70.36

TABLE 2.2 WORKING-AGE POPULATION (AS A % OF THE TOTAL POPULATION) BY REGION,2013–17

Source: SSO

Migration by region

Data for internal (Table 2.3) and international (Table 2.4) migration from the SSO are shown and discussed below. First, migration from other regions in the country to a given region are shown (Table 2.3a). The highest values were observed for the South West region. Second, migrations to other regions in the country from a given region are shown in Table 2.3b. Again, the highest values were obtained for the South West region, with the figure for the North East region coming close to it. The net internal migration values for all three regions studied were negative over this period (Table 2.3c). It can be seen that the biggest absolute value of net migration (emigration to other regions of the country) is shown for the North East region (166 on average). The average net internal migration rate relative to the population of the region was recorded as -0.049% for South West, -0.038% for Polog and -0.094% for North East. Thus, the region with the highest level of emigration to other regions in the country is North East, at more than double the rate of the other two regions under consideration.

Year	National level	South West	Polog	North East
2014	3 059	269	182	212
2015	3 231	275	193	216
2016	3 462	298	210	188
2017	3 123	299	215	206
Average	3 219	285	200	206

TABLE 2.3A IMMIGRATION FROM OTHER REGIONS IN THE COUNTRY, 2014–17

Source: SSO

TABLE 2.3B EMIGRATION TO OTHER REGIONS IN THE COUNTRY, 2014–17

Year	National level	South West	Polog	North East
2014	3 059	384	268	357
2015	3 231	417	328	332
2016	3 462	378	367	460
2017	3 123	391	330	337
Average	3 219	393	323	372

Source: SSO



Year/region	National level	South West	Polog	North East
2014	0	-115	-86	-145
2015	0	-142	-135	-116
2016	0	-80	-157	-272
2017	0	-92	-115	-131
Average	0	-107	-123	-166

TABLE 2.3C NET MIGRATION BETWEEN THE REGIONS IN THE COUNTRY, 2014–17

Source: SSO

Reported migrations to and from abroad are shown in Tables 2.4a, 2.4b and 2.4c. High values for both immigration and emigration were registered in the South West and Polog regions. In addition, Figure 2.7 illustrates the variation of net migration from and to abroad. The North East region values are positive and gradually decreasing, while a visible increase is observed in the other two regions. Growing positive values over the last three years are expected to continue in the future. Forecast values for net international migrations for year 2020 are as follows (persons per year): 535 for South West; 456 for Polog; and 62 for North East.

TABLE 2.4A IMMIGRATION FROM ABROAD TO THE THREE REGIONS, 2013–17

Year	National level	South West	Polog	North East
2013	2 431	340	210	114
2014	2 538	330	209	116
2015	3 876	512	456	172
2016	2 626	207	351	67
2017	2 764	253	362	105

Source: SSO

TABLE 2.4B EMIGRATION ABROAD FROM THE THREE REGIONS, 2013–17

Year	National level	South West	Polog	North East
2013	1 041	596	292	8
2014	839	416	275	6
2015	1 016	455	312	9
2016	630	128	276	18
2017	424	55	121	11

Source: SSO



Year	National level	South West	Polog	North East
2013	1 390	-256	-82	106
2014	1 699	-86	-66	110
2015	2 860	57	144	163
2016	1 996	79	75	49
2017	2 340	198	241	94

TABLE 2.4C NET MIGRATION FROM AND TO THE THREE REGIONS, 2013–17

Source: SSO

FIGURE 2.7 NET MIGRATION FROM AND TO ABROAD, 2013–17



Source: Own presentation based on SSO data

A question arises about the relevance of the data on migration discussed here. It would appear that emigration abroad is somewhat underreported. Even though the data come from official sources, a significant proportion of emigrants are not registered or reported as such, neither in their country of origin nor in the destination country. Thus, data about international emigration are to be used with caution. A lower risk of underreporting is to be expected regarding immigration from abroad.

Based on the discussion above, while the data on internal migrations provided by the SSO are highly reliable, the available statistics on international migrations can be used only for drawing general conclusions about trends within this phenomenon.

2.3 Employment by sector

Current and future trends in employment

In terms of economic activity, the evolution of employees' distribution by sector is of paramount importance for planning VET provision and system reforms. Various factors determine employment trends, and these can be rather difficult to control or estimate, while in some cases they are not



completely reported. For example, the outflows of people from the country through emigration greatly influence the changes in the workforce and the numbers in employment. The loss of skilled workers due to emigration is somewhat difficult to control through policy measures. Accurate information on international migration is missing, and hence the magnitude of this phenomenon is most probably underestimated.

To anticipate changes in the labour market, the general employment trends by sectors can be used for the empirical forecasting of the potential future number of employed persons in the country. Reliable sources of data are required to provide a solid basis for such forecasting. More specifically, the most reliable way of obtaining information on employment by sector is by the additional processing of SSO data. The results of such processing for the three regions under consideration are presented in Table 2.5 for the South West, Table 2.6 for Polog and Table2.7 for the North East.

Across the regions, there were no or very few people employed in the following sectors, and therefore the observations are imprecise in these areas: (1) activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; and (2) activities of extraterritorial organisations and bodies. These categories were thus excluded from the forecast calculations. In the case of the sector 'real estate activities' data were not available, while for a particularly important 'information and communication' sector data with a high degree of reliability was only partly available when disaggregated by region and, thus, the data used for forecasting were limited in their precision. In the North East region data for the sector 'mining and quarrying' are also restricted in terms of accuracy, even although the region has a tradition in mining. However, in spite of such limitations, the general trends show an acceptable level of reliability. At the national level, data for all sectors were determined with satisfactory levels of precision (Annex 1, Tables A1.1 and A1.2).

Both linear and exponential trends were considered in order to achieve an appropriate forecast of the future number of employees by sector in the three regions. As the amount of data available was limited, non-linear trends were not taken into account. Based on the tests carried out, it was concluded that linear trend forecasting would be the most convenient method for the specific needs of this report.

The results of the forecasting in all three regions are summarised by year in Tables 2.5–2.7, representing short-term (2020), medium-term (2025) and long-term (2030) views. Due to the scarcity of data for the above-mentioned three sectors (activities of households as employers/undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial organisations and bodies; and real estate activities) – it was impossible to carry out reliable forecasting even for the short term (2020). For the 'mining and quarrying' sector reliable forecasting was achieved only for the South West region.

Tables 2.5–2.7 present the number of persons employed in each region, by sector, in the period 2016–18, as well as the reliable forecast results for the years 2020, 2025 and 2030. Detailed forecasting results are discussed in the next section.



TABLE 2.5 EMPLOYMENT BY SECTOR – SOUTH WEST REGION, REGISTERED DURING 2016–18 AND FORECAST FOR 2020, 2025 AND 2030

Sector	2016	2017	2018	2020	2025	2030
Total	65 080	68 205	71 810	78 460	95 286	112 111
Agriculture, forestry and fishing	6 778	3 704	6 336	4 943	3 838	2 733
Mining and quarrying	(610)	1 074	1 673	2 714	5 372	8 031
Manufacturing	8 897	9 355	9 702	10 527	12 541	14 555
Electricity, gas, steam and air conditioning supply	2 038	1 360	(911)	threatened	threatened	threatened
Water supply, sewerage, waste management and remediation activities	1 525	1 979	2 142	2 808	4 350	5 893
Construction	7 298	7 273	7 274	7 244	7 182	7 120
Wholesale and retail trade, repair of motor vehicles and motorcycles	10 217	12 495	13 702	17 366	26 078	34 791
Transportation and storage	3 202	2 354	2 088	878	threatened	threatened
Accommodation and food service activities	4 629	5 410	4 898	5 383	6 056	6 729
Information and communication	(901)	(508)	(663)	334	threatened	threatened
Financial and insurance activities	(644)	1261	(775)	1 090	1 417	1 745
Real estate activities	:	:	:	NA	NA	NA
Professional, scientific and technical activities	1 301	1 083	1 031	732	55	threatened
Administrative and support service activities	1 200	1 334	1 242	1 322	1 427	1 533
Public administration and defence, compulsory social security	4 912	5 951	5 731	6 759	8 805	10 852
Education	4 613	5 186	6 339	7 969	12 285	16 601
Human health and social work activities	3 323	4 186	5 014	6 712	10 942	15 171
Arts, entertainment and recreation	1 132	1 709	(936)	965	474	threatened
Other service activities	1 641	1 634	1 340	1 087	333	threatened
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	_	_	_	NA	NA	NA
Activities of extraterritorial organisations and bodies	_	-	-	NA	NA	NA

Notes: (–) no occurrence; (:) estimate too imprecise to be published; () less precise estimate, to be used with caution; (NA) not available (for various reasons); (threatened) rather rapid decrease (forecast negative values) Source: SSO for data 2016–18 and own calculations for forecast values (2020, 2015, 2030)



TABLE 2.6 EMPLOYMENT BY SECTOR – POLOG REGION, REGISTERED DURING 2016–18AND FORECAST FOR 2020, 2025 AND 2030

Sector	2016	2017	2018	2020	2025	2030
Total	91 169	92 546	94 898	98 464	107 786	117 107
Agriculture, forestry and fishing	12 413	10 119	9 205	5 766	threatened	threatened
Mining and quarrying	:	(641)	:	NA	NA	NA
Manufacturing	12 112	15 960	16 909	22 189	34 182	46 175
Electricity, gas, steam and air conditioning supply	1 567	1 477	1 197	859	threatened	threatened
Water supply, sewerage, waste management and remediation activities	1 103	(618)	:	threatened	threatened	threatened
Construction	11 748	11 311	11 439	11 037	10 267	9 496
Wholesale and retail trade, repair of motor vehicles and motorcycles	15 382	15 567	14 622	14 051	12 152	10 254
Transportation and storage	3 014	3 371	3 783	4 542	6 464	8 385
Accommodation and food service activities	4 100	5 433	7 270	10 356	18 282	26 208
Information and communication	(574)	:	1 268	1 962	3 696	5 431
Financial and insurance activities	(836)	(839)	(966)	1 075	1 400	1 725
Real estate activities	-	:	:	NA	NA	NA
Professional, scientific and technical activities	(910)	1 452	2 083	3 241	6 173	9 105
Administrative and support service activities	1 030	1 044	1 277	1 487	2 104	2 721
Public administration and defence, compulsory social security	8 721	7 927	7 987	7 111	5 276	3 441
Education	9 228	8 284	7 065	4 947	threatened	threatened
Human health and social work activities	4 806	4 493	4 707	4 521	4 275	4 029
Arts, entertainment and recreation	1 243	1 550	1 992	2 718	4 591	6 463
Other service activities	2 247	1 968	2 169	2 011	1 815	1 620
Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use	_	:	:	NA	NA	NA
Activities of extraterritorial organisations and bodies	-	_	-	NA	NA	NA

Notes: (–) no occurrence; (:) estimate too imprecise to be published; () less precise estimate, to be used with caution; (NA) not available (for various reasons); (threatened) rather rapid decrease (forecast negative values) Source: SSO for data 2016–18 and own calculations for forecast values (2020, 2015, 2030)



TABLE 2.7 EMPLOYMENT BY SECTOR - NORTH EAST REGION, REGISTERED DURING 2016-18 AND FORECAST FOR 2020, 2025 AND 2030

Sector	2016	2017	2018	2020	2025	2030
Total	48 060	48 576	48 060	51 263	57 759	64 254
Agriculture, forestry and fishing	2 802	3 649	2 802	2 602	1 568	535
Mining and quarrying	(556)	:	556	NA	NA	NA
Manufacturing	9 427	8 596	9 427	9 352	9 784	10 216
Electricity, gas, steam and air conditioning supply	:	:	:	NA	NA	NA
Water supply, sewerage, waste management and remediation activities	(940)	(820)	940	873	816	758
Construction	6 331	6 907	6 331	8 510	12 768	17 026
Wholesale and retail trade, repair of motor vehicles and motorcycles	7 023	7 198	7 023	6 650	5 725	4 801
Transportation and storage	2 400	3 058	2 400	1 943	495	threaten- ed
Accommodation and food service activities	1 999	1 383	1 999	2 669	4 545	6 420
Information and communication	(969)	:	969	1 362	2 345	3 327
Financial and insurance activities	(572)	:	572	NA	NA	NA
Real estate activities	-	:	-	NA	NA	NA
Professional, scientific and technical activities	1 634	1 336	1 634	2 400	4 254	6 108
Administrative and support service activities	1 132	(735)	1 132	1 289	1 910	2 531
Public administration and defence, compulsory social security	4 739	6 188	4 739	4 709	3 608	2 507
Education	3 340	3 833	3 340	2 935	1 715	495
Human health and social work activities	2 315	2 155	2 315	2 708	3 663	4 619
Arts, entertainment and recreation	(618)	(603)	618	675	807	940
Other service activities	(750)	(715)	750	523	60	threaten- ed
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	_	_	_	NA	NA	NA
Activities of extraterritorial organisations and bodies	:	_	:	NA	NA	NA

Notes: (–) no occurrence; (:) estimate too imprecise to be published; () less precise estimate, to be used with caution; (NA) not available (for various reasons); (threatened) rather rapid decrease (forecast negative values) Source: SSO for data 2016–18 and own calculations for forecast values (2020, 2015, 2030)



2.4 Forecasting results

Trends in number of employed by sector and region

Table 2.8 shows the annual changes in the number of employed people by sector and region. The total number of those in employment is increasing across all the regions. Relative growth rates for the total number of employed people (annual change divided by population) in all three regions are also shown. The rates of increase for the employed population in the North East and Polog regions are significantly lower than the national average, while the South West region displays substantially higher relative growth rates than the others (1.53%). This exceptionally high growth rate can be accounted for by the migration of workers (permanent or daily) between the regions. The possibility for workers to migrate between neighbouring regions (Polog and South West) will be discussed below in the context of changes by sector and region.

	National level	South West	Polog	North East
Total employed annual change	17 752	3 365	1 864	1 299
Population	207 5301	219 663	321 573	176 260
Number of employed, relative growth rate	0.86%	1.53%	0.58%	0.74%

TABLE 2.8 RELATIVE GROWTH RATE OF TOTAL EMPLOYED, BY REGION, 2016–18

Source: Own calculations

In Table 2.9, the variations in the number of employed people by sector and region reveal significant changes in certain sectors in each region. The most prominent variations are in the Polog region, with increasing employment in the manufacturing sector (annual increase of 2 399) and a decrease in agriculture, forestry and fishing (-1 604). The second highest increase is seen in the category of wholesale and retail trade, repair of motor vehicles and motorcycles in the South West region (1 743), while the third is shown for the accommodation and food service activities sector (1 585) in the Polog region. It might be assumed that in the future Polog workers would move from the agriculture to the manufacturing and the accommodation and food service activities sectors, given the similarities in the competences required by these roles. In addition, it might be expected that workers would move from Polog to the South West region. The education sector shows divergent trends among the regions – a significant decrease in Polog (-1 082 annual change) and an increase in the South West region (863). Similar trends can be observed in employment patterns for the public administration and defence/ social security sector.



TABLE 2.9 TRENDS IN THE NUMBER OF EMPLOYED PEOPLE BY SECTOR AND REGION (ANNUAL CHANGE), 2016–18

Sector	South West	Polog	North East
Total	3 365	1 864	1 299
Agriculture, forestry and fishing	-221	-1 604	-207
Mining and quarrying	532	NA	NA
Manufacturing	403	2 399	86
Electricity, gas, steam and air conditioning supply	-563	-185	NA
Water supply, sewerage, waste management and remediation activities	309	-485	-12
Construction	-12	-154	852
Wholesale and retail trade, repair of motor vehicles and motorcycles	1 743	-380	-185
Transportation and storage	-557	384	-290
Accommodation and food service activities	135	1 585	375
Information and communication	-119	347	197
Financial and insurance activities	66	65	NA
Real estate activities	NA	NA	NA
Professional, scientific and technical activities	-135	586	371
Administrative and support service activities	21	123	124
Public administration and defence, compulsory social security	409	-367	-220
Education	863	-1 082	-244
Human health and social work activities	846	-49	191
Arts, entertainment and recreation	-98	374	27
Other service activities	-151	-39	-93
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	NA	NA	NA
Activities of extraterritorial organisations and bodies	NA	NA	NA

Note: (NA) not available (for various reasons)

Source: Own calculations

Short-term forecasting results (year 2020)

The forecast trends in sectoral employment presented in Tables 2.5, 2.6 and 2.7 reveal that by 2020 the electricity, gas, steam and air conditioning supply sector in Polog could be suffering from a shortage of employees. Similarly, also in Polog, the sector of water supply, sewerage, waste management and remediation activities could experience a deficit of workers over the next few years. The decrease in employment in agriculture, forestry and fishing in Polog will lead to a figure of 5 766 workers in this sector (1.79% of the population in the region) in 2020, compared to 2 602 in the North East region (1.48%) and 4 943 for the South West region (2.25%). In Polog, by 2020, 6.90% of the population are expected to be employed in the manufacturing sector, which is comparable with (though somewhat higher than) the figure for the North East region (5.31%).



Medium- and long-term forecasting results (2025 and 2030)

As demonstrated, the results in Tables 2.5–2.7 showing high variations in certain sectors (such as agriculture, forestry and fishing in Polog) should be treated with caution. More specifically, after a period of rapid change, stagnation is expected to occur at a level comparable to the national average. In any event, a trend showing a rapid downward trajectory calls for special attention, since it can also lead to a substantial deficit of workers in the sector concerned. Further studies should be carried out in order to identify more precisely the origin of such sudden changes. Among other factors, triggers for change could be internal and international migration or transitions between sectors and subsectors.

Forecast trends in the context of economic development

Electricity, gas, steam and air conditioning supply is a weak and shrinking sector in all three regions. Measures to increase energy production from renewable sources at the local/regional level could improve the situation, from both the economic and ecological point of view.

Substantial differences between the regions were observed in the transportation and storage sector. While in Polog this sector is growing, in the other two regions it is declining rapidly. Such a result can be attributed to differences in the transportation infrastructure in the selected regions. Specifically, Polog has relatively good road connections with Kosovo³ to the north and Skopje to the east as well as with neighbouring countries via the A1 Highway. Transport and communication links between the North East Region and the bordering countries of Bulgaria and Serbia function less well and thus incur higher carriage costs for the transportation and storage sector and others, such as accommodation and food service activities, which are also experiencing a decline (with an expected figure of 6 420 employed in 2030 in the North East region, compared to a projected 26 208 in the Polog region).

The situation of the transportation and storage sector in the South West region is even worse, with no rapid communication links to any other region or country. This has an influence on traditionally developed areas such as accommodation and food service activities, and only moderate growth – from 5 410 workers employed in 2017 to 6 729 in 2030 – is thus expected in this sector. This finding can be connected with the observed decrease in the sector of arts, entertainment and recreation and other service activities. Easy access to accommodation and food destinations obviously has a profound effect on customers' choices – thus a lack of reliable transport networks will limit the chances of benefitting from the existing rich natural and cultural heritage throughout the regions. This situation is expected to remain unchanged for the foreseeable future, in both the North East and South West regions in particular. Although an efficient transport infrastructure is critical for the development of various sectors, creating such networks takes time and consumes a huge amount of resources.

In the case of the North East, a potential solution for the medium term is the completion of the railway connecting this region with Bulgaria on the one side and Skopje on the other. Construction of this section of the line was initially planned to start in 2019 and take place over the next four years. Although a delay in the preparation stage seems likely, it should be possible to complete the construction by 2025. This investment could prevent the decline of several sectors in the North East region, as observed in this study. In the case of the South West region, the problem of insufficiently developed transport infrastructure could persist for much longer, since developing infrastructure in widely dispersed directions is ineffective in terms of supporting intensive economic activities. The announced investments in the infrastructure of the Prespa area could bring certain benefits, but

³ This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.



greater investment in the transport network is needed to promote faster growth and development in the entire region.

2.5 Regional gross domestic product

A crucial indicator for the regional analysis is the difference in GDP across the regions. The available relevant official data for regional GDP over the period 2012–16, as reported by the SSO, are displayed in Table 2.10.

Year	National level	South West	Polog	North East
2012	226 440	170 493	107 394	147 095
2013	243 161	178 726	118 672	151 462
2014	255 206	189 109	117 284	148 745
2015	269 996	212 913	121 824	164 161
2016	286 995	222 133	132 538	168 301

TABLE 2.10 REGIONAL GDP, 2012–16 (DENARS PER CAPITA)

Source: SSO (calculation for this report)

Variations in regional GDPs over the same period are also displayed in Figure 2.8, along with the linear trends that closely follow a linear growth model. The South West region shows the highest GDP per capita, increasing at almost the same rate as the national rate. The levels of GDP for the other two regions are rising at a slower pace.

FIGURE 2.8 VARIATIONS IN GDP FOR THE THREE REGIONS COMPARED TO THE NATIONAL LEVEL



Source: Own calculations based on SSO data



In order to display the regional disparities in GDP more clearly, Figure 2.9 presents the regional GDPs per capita relative to the national level. From this illustration it is clear that the GDP for the South West region is slowly approaching the national level value. The GDP for the Polog region is relatively static, remaining at almost the same level compared to the national figure (about one half), while the GDP for the North East region is decreasing markedly compared to the national level. Thus, specific measures are required to halt the economic slowdown in this region, since such a decline can, in the long term, cause long-lasting negative socio-economic effects.

FIGURE 2.9 VARIATIONS IN REGIONAL GDP FOR THE THREE REGIONS RELATIVE TO THE NATIONAL GDP



Source: Own calculations based on SSO data

2.6 Salaries across the regions

There are also visible differences between the salaries in the different regions. As can be seen in Table 2.11, the differences between the average net salaries per month in the selected regions are much smaller compared to the differences between the regional GDPs. Thus, for Polog, where the regional GDP per capita is about a half the value of the national level, the salaries are almost insignificantly lower (only by 5%) than the national average. Average salaries are even slightly higher (about 6%) than in the South West region, even if the regional GDP in the South West region is 60% higher than in Polog.

Salaries are substantially lower in the North East region compared to other regions and the national average (about 77% of the countrywide level). This is comparable with the regional GDP disparities, the GDP for the North East region being about 60% of the national level. Thus, in addition to having the highest unemployment rate, North East region workers receive substantially lower salaries than employees in the other two regions, revealing once again the challenging socio-economic situation in this region.



Year	National level	South West	Polog	North East
2013	21 145	19 329	20 256	16 398
2014	21 394	19 460	20 425	16 524
2015	21 906	19 670	20 620	16 848
2016	22 342	20 044	21 484	16 952
2017	22 928	20 261	21 809	17 749

TABLE 2.11 AVERAGE NET SALARIES BY REGION, 2013–17 (IN DENARS)

Source: SSO

2.7 Unemployment rates

In addition to salaries, unemployment rates vary strongly by region. Thus, as presented in Table 2.12a, in the North East region unemployment rates in some years exceeded 40%, while the lowest figure was 35.7% in 2017. All three regions studied in this report exhibited much higher values compared to the national average. Such high rates of unemployment indicate that there is a limited demand for labour on the part of companies operating in the regions or planning to invest there.

Year	National level	South West	Polog	North East
2013	29.0	36.7	33.6	44.9
2014	28.0	36.4	30.7	44.0
2015	26.1	33.9	29.6	43.2
2016	23.7	33.0	26.4	42.2
2017	22.4	30.5	29.0	35.7

TABLE 2.12A UNEMPLOYMENT RATES BY REGION, 2013–17 (%)

Source of data: SSO

Education is an important predictor of unemployment and inactivity. Table 2.12b shows the incidence of unemployment in the country disaggregated by level of education for the period 2013–17. It is worth noting that the people who have had a higher vocational education exhibit the lowest unemployment rate (around 13% in 2017), even lower that tertiary graduates (around 19% in 2017). The highest incidence of unemployment is seen, unsurprisingly, among those without or with low levels of education. This is in line with unemployment characteristics in other countries of the region and the European Union.

Although at the first glance, the low incidence of unemployment among people who have graduated from higher vocational education might lead to positive conclusions about their chances of participating in the labour market and finding employment, data on inactivity rates reverse that supposition. Data presented in Table 2.12c reveal a very high rate of inactivity in this group, which partly explains the lower incidence of unemployment among this category. The lowest inactivity rate is observed for those with a university education, and this is again typically seen in other countries. Although university graduation positively correlates with higher activity and employment rates, workers in this group are relatively frequently vertically mismatched once in employment. According to the ETF 2019 analysis in North Macedonia, around one in five employees with a tertiary-level attainment work in jobs below their level of education/qualifications (ETF, 2019).



Education level	2013	2014	2015	2016	2017
Total	29.0	28.0	26.1	23.7	22.4
Without education	46.0	54.4	45.2	37.7	28.4
Incomplete primary and lower secondary education	32.5	32.6	27.7	22.9	24.5
Primary and lower secondary education	34.0	31.4	29.7	29.4	26.6
Three years of secondary education	30.5	29.1	27.1	23.1	19.3
Four years of secondary education	28.3	28.1	26.5	23.8	23.2
Higher vocational education	16.3	17.5	18.1	12.9	13.4
University-level education	24.6	23.1	21.4	19.9	19.2

TABLE 2.12B UNEMPLOYMENT RATES BY EDUCATION LEVEL, 2013–17 (%)

Source of data: SSO

TABLE2.12C INACTIVITY RATES BY EDUCATION LEVEL, 2013–17 (%)

Education level	2013	2014	2015	2016	2017
Total	42.8	42.7	43.0	43.5	43.2
Without education	79.2	78.9	89.5	82.9	86.9
Incomplete primary and lower secondary education	73.6	75.2	74.7	78.6	77.9
Primary and lower secondary education	61.5	60.5	62.1	65.4	65.9
Three years of secondary education	31.8	31.8	32.0	33.2	35.9
Four years of secondary education	31.1	32.1	32.6	33.1	33.2
Higher vocational education	40.6	41.1	44.3	45.6	47.7
University-level education	16.2	17.1	15.0	15.2	14.8

Source: Own calculations based on SSO data

Table 2.12d provides a snapshot, from 31 May 2019, of the number of registered unemployed persons disaggregated by education level (taken from the ESA registered unemployed database). The territorial level of this reporting is the ESA unit municipality in the three regions under consideration. The second largest group of unemployed people are those with secondary education, while the highest number of registered unemployed are those with the lowest education level, namely jobseekers without education or with only primary education.



TABLE 2.12D REGISTERED UNEMPLOYED PEOPLE BY EDUCATION LEVEL ATTAINED,SITUATION ON 31 MAY 2019

ESA	Total	Without education and with primary education	Incomple- te secondary education	Second- ary education	Higher education	Bachelor	Master	PhD
South West	8 688	4 123	1 177	2 214	147	964	62	1
Debar	1 996	1 425	67	403	6	94	1	0
Makedonski Brod	1 178	565	161	383	10	57	2	0
Ohrid	2 785	929	591	736	91	406	31	1
Struga	2 729	1 204	358	692	40	407	28	0
Polog	21 797	12 238	1 676	5 480	175	2 053	173	2
Gostivar	6 497	3 993	360	1 576	37	484	47	0
Kichevo	2 471	1 092	277	700	43	314	44	1
Tetovo	12 829	7 153	1 039	3 204	95	1 255	82	1
North East	14 492	7 237	1 920	4 099	125	1 052	58	1
Kratovo	624	259	60	243	5	54	3	0
Kriva Palanka	2 492	896	520	873	26	169	8	0
Kumanovo	11 376	6 082	1 340	2 983	94	829	47	1
Total (three regions)	44 977	23 598	4 773	11 793	447	4 069	293	4

Source: Own calculations based on ESA data

The same disaggregation by education level is presented in Table 2.12e for people who became unemployed, or registered for the first time as unemployed, in 2018. Data is presented for all the municipalities in the three regions. Table 2.12f presents the structure by education level for the registered unemployed coming from employment in the same year.



TABLE2.12E FIRST-TIME REGISTERED UNEMPLOYED PEOPLE BY EDUCATION LEVEL ATTAINED AND BY MUNICIPALITY, 2018

ESA	Total	Without education and with primary education	Incomple- te second- ary education	Second- ary education	Higher education	Bachelor	Master	PhD
South West	866	206	11	363	4	258	24	
Vevchani	11	1	1	4		4	1	
Debar	108	27	1	47		32	1	
Debarca	2			2				
Kichevo	223	35	1	103	2	76	6	
Makedonski Brod	39	6	1	22		10		
Ohrid	132	17	2	53		51	9	
Plasnica	22	8	3	11				
Struga	313	106	2	112	2	84	7	
Centar Zhupa	16	6		9		1		
Polog	1 869	559	19	858	18	391	24	
Bogovinje	183	71	2	71		38	1	
Brvenica	78	21		49		7	1	
Vrapchishte	109	51	1	36		20	1	
Gostivar	499	167	1	232	4	87	8	
Zhelino	96	40	2	41		13		
Jegunovce	70	21	2	38		9		
Mavrovo and Rostusha	17	5		7		5		
Tearce	120	16	1	72	3	27	1	
Tetovo	697	167	10	312	11	185	12	
North East	1 055	181	23	637	1	197	16	
Kratovo	41	4		26		10	1	
Kriva Palanka	87	6	5	60		13	3	
Kumanovo	742	130	15	447	1	140	9	
Lipkovo	148	34	3	75		33	3	
Rankovce	20	2		17		1		
Staro Nagorichani	17	5		12				
Total (three regions)	3 790	946	53	1 858	23	846	64	

Source: ESA



TABLE 2.12F REGISTERED UNEMPLOYED PEOPLE FROM EMPLOYMENT BY EDUCATIONLEVEL ATTAINED AND BY MUNICIPALITY, 2018

ESA	Total	Without education and with primary education	Incomple- te second- ary education	Second- ary education	Higher education	Bachelor	Master	PhD
South West	3 441	889	511	1 177	66	752	45	1
Vevchani	52	9	6	17	1	17	2	
Debar	162	57	10	64	0	31	0	0
Debarca	64	19	21	15	1	8	0	
Kichevo	654	122	75	292	16	139	9	1
Makedonski Brod	275	67	53	119	1	32	3	0
Ohrid	1 172	223	222	364	31	311	21	0
Plasnica	37	26	3	8	0	0	0	0
Struga	1 010	361	120	289	16	214	10	0
Centar Zhupa	15	5	1	9	0	0	0	
Polog	3 101	797	217	1 260	31	750	43	3
Bogovinje	106	34	4	30	0	38	0	0
Brvenica	238	65	26	116	2	26	2	1
Vrapchishte	102	32	4	34	0	29	3	0
Gostivar	940	245	53	342	12	268	18	2
Zhelino	79	26	2	15	0	35	1	0
Jegunovce	194	52	27	93	0	21	1	
Mavrovo and Rostusha	55	19	1	18	3	13	1	
Tearce	168	29	14	76	2	46	1	0
Tetovo	1 219	295	86	536	12	274	16	0
North East	3 890	884	605	1 779	40	552	29	1
Kratovo	314	112	27	140	1	33	1	0
Kriva Palanka	966	199	175	482	6	101	3	0
Kumanovo	2 332	480	381	1 038	32	377	23	1
Lipkovo	90	19	4	35	1	29	2	0
Rankovce	105	54	9	38	0	4	0	
Staro Nagorichani	83	20	9	46	0	8		
Total (three regions)	10 432	2 570	1 333	4 216	137	2 054	117	5

Source: ESA


Figure 2.10 presents the ratio between the first-time registered unemployed and those coming from previous employment, while also providing disaggregation by education level and region. The main feature is that for all education levels the number of the first-time registered unemployed is smaller than the registered unemployed coming from previous employment (a ratio of about 0.5).

Substantial differences were observed between Polog and other regions (and also the national level) regarding the unemployed with lower education levels. Thus, the ratio for the Polog region for various education levels is almost the same (around 0.6), while for other regions it varies from about 0.05 to 0.55. Patterns for the other two regions and the national level are relatively similar.

The above-described feature is the result of there being substantially higher numbers of first-time registered unemployed people in Polog than in the other regions. This indicates that in this region ESA is considered a highly efficient way of gaining employment by first-time entrants into the labour market looking for a job.

FIGURE 2.10 RATIO BETWEEN THE NUMBERS OF FIRST-TIME REGISTERED UNEMPLOYED PEOPLE AND THE INFLOW OF THE UNEMPLOYED FROM EMPLOYMENT, BY EDUCATION LEVEL, IN THE THREE REGIONS, 2018







2.8 Job vacancies

Job vacancies at the national level

There are also substantial differences in job vacancies across the regions. Below are listed the figures for the number of job vacancies (Table 2.13a) and job vacancy rates (Table 2.13b) as reported quarterly by the SSO. The period analysed is 2016–18. The last row in each table shows the average values for the period under review. Although there are significant deviations from the average value, no noteworthy (increasing or decreasing) trends can be observed, either at the national level, or for any of the regions under study. Therefore, the observed average values for the given period can be used to forecast future numbers of job vacancies by region.

Year	National level	South West	Polog	North East
2016 Q1	6 649	422	248	327
2016 Q2	6 687	535	211	383
2016 Q3	6 200	340	120	215
2016 Q4	6 470	293	180	345
2017 Q1	7 871	596	319	113
2017 Q2	7 580	926	158	220
2017 Q3	7 586	442	425	166
2017 Q4	6 534	337	176	148
2018 Q1	8 331	521	282	191
2018 Q2	7 199	693	306	180
2018 Q3	8 459	612	447	297
2018 Q4	8 156	668	262	185
Average	7 310	532	261	231

TABLE 2.13A JOB VACANCIES (NUMBER) BY REGION, 2016–18 (QUARTILES)

Source: Own calculations based on SSO data

Absolute values (Table 2.13a) are useful for planning education in the next period, assuming these represent real needs. Job vacancy rates are helpful for making comparisons between the regions. They are highest in the South West region, with an average value for the given period of 1.67%. This figure is slightly higher than the national average and markedly exceeds the vacancy rates given for the other two regions: Polog (1.05%) and North East (1.11%). This finding supports the assumption that in less developed regions the demand for skills is generally lower than in more developed areas.



Year	National level	South West	Polog	North East
2016 Q1	1.38	1.37	1.11	1.6
2016 Q2	1.38	1.7	0.97	1.79
2016 Q3	1.27	0.98	0.6	1.04
2016 Q4	1.32	0.9	0.86	1.6
2017 Q1	1.6	2.03	1.42	0.54
2017 Q2	1.53	3.05	0.68	1.01
2017 Q3	1.52	1.59	1.72	0.76
2017 Q4	1.33	1.23	0.7	0.67
2018 Q1	1.68	1.6	1.03	0.96
2018 Q2	1.44	1.9	1.07	0.99
2018 Q3	1.67	1.7	1.56	1.49
2018 Q4	1.61	1.96	0.86	0.87
Average	1.48	1.67	1.05	1.11

TABLE 2.13B JOB VACANCY RATES BY REGION, 2016–18 (QUARTILES) (%)

Source: Own calculations based on SSO data

When linking different aspects relative to the labour market in the three regions under consideration, the North East region has the highest unemployment rate and one of the lowest job vacancy rates, while salaries are markedly lower here than in the other regions. Along with one of the lowest regional GDPs per capita, these characteristics demonstrate the weakness of the North East region's economy, and hence the demand side of its labour market is very limited compared to the other regions.

In the region of Polog, the situation is as follows:

- Its regional GDP per capita is the lowest among the regions studied here;
- Its unemployment rate is the second lowest;
- Its job vacancy rate is one of the lowest; and
- Its salaries are the highest.

The last feature (high salaries) is unexpected for the region with the lowest GDP per capita along with the highest share of working-age citizens in the total population.

Projections of job vacancies by sector to regional level

Using the data for the distribution of job vacancies by sector for a given period (the first quartile of 2019; Table A1.3 in Annex 1), the number of job vacancies was projected for 2020, by sector and region as well as by municipality. Thus, using the same averages as in the previous section, the projected values for job vacancies by sector and region are displayed in Table 2.13c.



Sector	National level	South West	Polog	North East
Total	7 310	532	261	231
Mining and quarrying	37	3	1	1
Manufacturing	1 929	140	69	61
Electricity, gas, steam and air conditioning supply	8	1	0	0
Water supply, sewerage, waste management and remediation activities	30	2	1	1
Construction	452	33	16	14
Wholesale and retail trade, repair of motor vehicles and motorcycles	1 315	96	47	42
Transportation and storage	641	47	23	20
Accommodation and food service activities	509	37	18	16
Information and communication	275	20	10	9
Financial and insurance activities	90	7	3	3
Real estate activities	15	1	1	0
Professional, scientific and technical activities	213	16	8	7
Administrative and support service activities	461	34	16	15
Public administration and defence, compulsory social security	767	56	27	24
Education	252	18	9	8
Human health and social work activities	167	12	6	5
Arts, entertainment and recreation	109	8	4	3
Other service activities	41	3	1	1

TABLE2.13C NUMBER OF PROJECTED JOB VACANCIES, BY SECTOR AND REGION, 2020

Source: Own calculations based on SSO data

Further, projections of job vacancies at the municipality level in the selected regions are presented in Table 2.13d.



TABLE 2.13D NUMBER OF PROJECTED JOB VACANCIES NUMBER BY SECTOR AND MUNICIPALITY, 2020

Municipality	Population (2020)	Number of job vacancies
South West	217 658	532
Centar Zhupa	7 252	18
Debar	21 261	52
Debarca	3 192	8
Kichevo	57 387	140
Makedonski Brod	5 930	14
Ohrid	48 666	119
Plasnica	5 052	12
Struga	66 515	163
Vevchani	2 403	6
Polog	325 078	261
Bogovinje	31 386	25
Brvenica	16 691	13
Gostivar	84 569	68
Jegunovce	10 314	8
Marvoro & Rostusha	8 988	7
Tearce	23 076	19
Tetovo	93 137	75
Vrapchishte	28 067	23
Zhelino	28 850	23
North East	177 397	231
Kratovo	31 386	25
Kriva Palanka	16 691	13
Kumanovo	84 569	68
Lipkovo	10 314	8
Rankovce	8 988	7
Staro Nagorichane	23 076	19

Source: Own calculations based on SSO data



The average values for regional levels (Table 2.13a) were used for projecting the number of job vacancies at the municipality level, since it was previously found that no visible trend is present in the number of job vacancies. Using our own forecast values for the population of municipalities in the three regions, and assuming a proportional distribution of job vacancies, the numbers of job vacancies by municipality for the year 2020 have been estimated and are shown in Table 2.13d. The highest numbers of job vacancies are estimated for Struga (163) and Kichevo (140).

2.9 Analysis of survey results

Alongside the quantitative sources of data discussed above, additional specific information was obtained through an ad hoc survey covering key aspects of skills supply and demand. The questionnaires used for the field implementation are presented in Annex 2 to this report. The results and findings from the field work are presented in the following sections, namely the responses collected through questionnaires for several focus groups relevant to this study.

ESA responses

ESA units (the central office and 10 local units/employment offices) responded exhaustively to the questionnaire. ESA staff demonstrated great interest in forming better connections between VET and business and considered such links as particularly important for matching skills supply to demand. Based on the respondents' experience, it was found that the main reasons for unemployed VET graduates not applying for jobs on offer were low/unattractive salaries (60%) and graduates not having the required skills (40%).

In general, ESA considers itself to be performing an essential role in establishing connections between the supply and demand of skills in the labour market. Thus, 80% of the responses stated that ESA was planning activities aimed at encouraging more unemployed graduates from vocational schools to register and subsequently find employment through ESA activities. It was also affirmed (by an overwhelming majority) that ESA plans to introduce specific programmes in order to achieve a much higher share of new employment for vocational school graduates through its activities compared to the other employment channels. In addition, it was considered (by 90%) particularly important to focus attention on registered unemployed VET graduates who had been out of work for more than a year. Most respondents stated that ESA undertakes activities that are intended to motivate employers to create positions requiring the VET profiles of the registered unemployed who have been waiting for a job for more than a year.

Another clear finding is the positive attitude towards cooperation with vocational schools. Thus, all the respondents affirmed that ESA considers closer cooperation with vocational schools as necessary in order to accelerate the employment of these institutions' graduates. They also confirmed their readiness to participate in the creation of a new regulation that would define more precisely the roles shared by and the collaboration between ESA and vocational schools in connecting education and business.

Opinion of ESA on the role of regional VET centres

The local needs survey/questionnaire identified a high level of support from this focus group for the establishment of regional VET centres in the regions under consideration. ESA respondents supported the setting up of regional VET centres and viewed this as a task to be performed in the near future (the short or medium term).



ESA responses with regard to the role of regional VET centres are summarised in Table 2.14 and include the precise identification of the role of future regional VET centres, i.e. addressing skills shortages.

TABLE 2.14 SKILLS EXPECTED TO BE COVERED BY REGIONAL VET CENTRESIN THE REGIONS

Region	Covering the lacking skills	Evidence for the need for such skills provision
South West	Manufacturing, catering: special crafts such as welders, argon welders and locksmiths, as well personnel required by the tourist services sector, where the skills of receptionists, waiters and cooks should be raised to a higher level	The difficulty of recruiting skilled workers into the labour market as well as concerns over the fulfilment of work tasks at a higher professional level
Polog	Manufacturing and crafts: textile workers, welders, electricians, metal processors, mechanics, woodworkers	A lack of workers to fit such profiles
North East	Graduate technologists, IT workers, managers (almost all sectors), tailors, welders, metal processors, cooks, waiters, drivers	The situation in the labour market

Source: Own analysis based on the field work results

As seen in Table 2.14, respondents identified various reasons for developing regional VET centres. In the South West region, the skills required to fulfil job tasks at a higher professional level were emphasised. In the Polog region the main issue was seen as a lack of people with the necessary skills, while in the North East region it was perceived that there was a problem with the labour market in general.

Responses of chambers of commerce/organisations of employers

The analysis of responses received from the chambers of commerce or organisations of employers, along with the numbers of their members (Table 2.15) are discussed in this section.

TABLE 2.15 ORGANISATIONS OF EMPLOYERS/CHAMBERS OF COMMERCE INCLUDED IN THE ANALYSIS

Number of companies/members
> 23 000
> 15 000
> 1 700
1 012
80

Source: Results based on field work

All organisations of employers/chambers of commerce gave detailed answers that were very useful for this study. It was evident that they paid particular attention to the connection between the business sector and the VET system (see the example below).



Box 2.1 Where do chambers of commerce/organisations of employers see their role in the process of recruiting new employees for companies?

The Association of Macedonian Chambers of Commerce, through the Macedonian Centre for Science, Research and Education, is a verified provider of adult education. In accordance with established programmes and modules, the Association conducts professional training for several occupations and qualifications. Furthermore, representatives of the Association actively participate in bodies that provide guidance for the promotion of vocational education and training, qualifications, occupational standards, the national qualifications framework, etc. In addition, the Association actively cooperates with local self-government and education institutions (both higher and secondary vocational education) in order to highlight the needs of the private sector in terms of the profiles required by the economy. This kind of cooperation should be further promoted in the future with the aim of exercising long-term positive effects on the labour market. Organisations of employers/chambers of commerce see their role in the process of creating educational programmes to meet the needs of employers, as linking schools and companies for the purpose of providing practical instruction and market-oriented training.

Source: Results based on field work

Organisations of employers /chambers of commerce consider that the best way for companies/employers to recruit new workers with a specific education profile is through vocational schools, and, to a lesser extent, adult education providers, without neglecting the importance of all the other actors and ways of finding employment. The attitude of the organisations of employers/ chambers of commerce is complementary to the views of ESA. The role of ESA in the transition from education to employment is clearly important. In addition, the recruitment of new workers with a specific education profile channelled through vocational schools and adult education providers deserves particular attention in securing stronger links between the 'skill producers' and the 'skills users' in the labour market. Chambers of commerce/organisations of employers are particularly useful for their support in the development of regional VET centres, which they consider as playing the role of workforce brokers.

The answers to the question 'When negotiating with trade unions, what is the level of importance you attach to the employment of graduates from vocational schools?' differed substantially. For some chambers of commerce/organisations of employers the level of importance was very high, for others it was low, while still others do not discuss these issues with trade unions and are focused on straightforward communication with vocational schools.

Connected to this issue is the concern contained in the question: 'When a shortage of workers with specific education profiles/skills required for a type of job is observed, does your chamber of commerce/organisation of employers advise your members to increase the salaries for this position?'. For the Economic Chamber of North-West Macedonia and the Economic Chamber of Macedonia the answer was definitively positive, while for the ICT Chamber of Commerce (MASIT) it was negative. The Association of Macedonian Chambers of Commerce considers that these issues are regulated by the labour market itself.

In their responses, the organisations of employers/chambers of commerce stated that they organise activities aimed at forging links between the education sector and business (see the example below).



Box 2.2 Where do organisations of employers/chambers of commerce see their role in linking education with business?

The Economic Chamber of North-West Macedonia has signed memoranda of cooperation with several universities, such as the South East European University and the Mother Teresa University, as well as the State University in Tetovo. The purpose of these collaborations is to enable universities to form a better picture of the skills needed in the labour market. Likewise, the Chamber is involved in the project New Trends for Internships, which is supported by Erasmus and focuses on secondary vocational schools.

The Economic Chamber of Macedonia is involved in the verification of companies in the process of admitting students to receive practical training in the workplace. The chamber conducts tuition for mentors in companies implementing hands-on instruction, as well as participating in the preparation of educational programmes and offering training for qualifications that are demanded by the labour market,

The ICT Chamber of Commerce (MASIT) contributed to the development of the internship legislation which recently came into force (the Law on Internships – adopted by the Assembly on 16 May 2019 and published in the *Official Gazette* on 21 May 2019).

Source: Results based on field work

Based on the above statements it seems that organisations of employers/chambers of commerce are highly involved in collaborating with educational institutions. It is expected that they will be equally committed to cooperating with the regional VET centres that will established in these and other regions of the country.

Responses of municipalities/local economic and social councils

From the side of local administration, responses have been collected from municipalities/local economic and social councils. Their dominant view was that it is particularly important that vocational schools provide the VET profiles to meet both local (municipality) and regional needs. Concerning the quality of adult education services, they typically gave this a rating of 2 on a scale from 1 to 5; that is, they considered that the quality of the adult education and training services provided by vocational schools in their municipality is only satisfactory (average score: 1.8). The quality of services offered by other providers was awarded an even slightly lower mark.

On the topic of encouraging leading companies to invest in their areas, while municipalities/local economic and social councils affirmed that they were undertaking intensive activities aimed at attracting major firms/investors, they were only partly satisfied with the results of these initiatives.

A large variety of answers was obtained to the question: 'How much are investors interested in the VET profiles taught in schools in your municipality?'. Interest on the part of investors was found to be present to varying degrees in different municipalities. Most probably investors have a range of needs that are not in line with the education profiles covered by local vocational schools, since these institutions were established in the past according to the needs of the economy at that time. Relocating some of the educational programmes could be considered as a way to meet the actual needs of investors.



Municipalities/local economic and social councils are clearly willing to collaborate with local vocational schools in activities aimed at encouraging leading companies/investors to invest in their area. Thus, future organised activities involving vocational schools and municipalities/local economic and social councils in the fulfilment of that goal will be justified by the motivation of the local actors.

As with ESA, the municipalities/local economic and social councils support the development of regional VET centres in their region. The specific sectors and profiles to be covered by the regional VET centres are almost the same as those falling within the ambit of ESA. In addition, for the North East region, the construction and health sectors were also listed.

The urgency of the need to establish regional VET centres was considered the same as it was in the previous focus groups – short or medium term.

Employers' responses

With regard to the feedback from companies on the types of skills/professions they require, the most specific answer was obtained in the case of the North East region. Companies from there reported unsuccessful attempts to hire employees in the geological and mining profession and those with a metallurgical specialty, and particularly mining machinery operators (specifically operators of electro-hydraulic drills and mine pit diesel loaders).

The dominant reason the employers gave for not being able to recruit the personnel they needed was the limited number of candidates with suitable qualifications and work experience. This observation differed from the response of ESA that the principal reasons that unemployed graduates from vocational schools rejected jobs put forward by ESA were the low salaries offered and their not having the skills requested. Negotiable salaries for the profiles for which applicants with the appropriate skills and experience are required could be a solution here. In any event, the links between different actors in the labour market and the channels whereby experience can be gained should be strengthened in order to secure a functional link between skills supply and demand in the labour market.

Employers identified ESA and, in some cases, vocational schools as the best means for recruiting new workers with specific education profiles. Usually companies recruit new workers with such specific profiles through ESA or by placing advertisements in the media, as well as, in some cases, by using the services of VET providers.

Companies professed to have regular contact with one or more vocational schools and/or adult education providers mainly to access further training for their employees, and in some cases to recruit employees, as well as in part to participate in the testing of students/trainees.

The majority of companies affirmed that the practical skills of graduates of vocational schools/adult education providers did not match their company's requirements, and in many cases they were found to have inadequate theoretical knowledge. On the other hand, the employers did identify some aspects of the training offered by vocational schools/adult education providers as particularly satisfactory (see the example below).



Box 2.3 What do companies find particularly satisfactory about the training offered by vocational schools/adult education providers?

It was seen as particularly satisfactory that practice is often included as a compulsory part of the vocational education programme. The trainees can thus grasp the practical foundations of the role they are learning about. They are therefore made familiar with the general processes of their profession, and an appropriate basis is laid for swifter integration into employment after graduation and for further upgrading/progression in their careers.

Source: Results based on field work

When looking at companies' answers, there were few comments on the problems with general/key and technical/professional skills among their current employees. The main observation was that for employees on lower organisational levels, computer skills and soft skills, in general, need to be improved.

Companies also related their experience of staff retraining. Various possibilities for external and inhouse training were used. An example of retraining employees in a company from the sector of wholesale and retail trade, repair of motor vehicles and motorcycles is given below.

Box 2.4 If your employees have any retraining or skills upgrading courses, please describe for which skills, how many people, when, where?

'The employees continuously attend training courses for upgrading, especially employees in administrative positions, as well as sales staff. Specialised trainings for technical knowledge and skills in the IT department were held by specialised training centres. Staff attended conferences held by professional associations and expert lectures provided by the Economic Chamber of Macedonia. Sales personnel receive continuous training depending on their position and specialty provided by the company through its professional staff.'

Source: Results based on field work

Companies assessed the quality of adult education and training services provided both by vocational schools and by other providers (adult education centres, workers' universities, etc.) with an average rating of around 3 on a scale of 1 to 5. Therefore, in order to meet employers' expectations, the quality of the education and training services provided for their employees by VET institutions must be further improved.



3. CONCLUSIONS AND PRIORITIES FOR ACTION

The specifics of the labour market of the three regions of North Macedonia under examination – South West, Polog and North East – have been explored and described in order to support the conceptualisation and establishment of regional VET centres, which are considered essential in the reform of education and training in the country. The European Union and the international donor community provide financial and expertise support.

This analysis complements a parallel research, which focused on VET providers, in particular vocational schools, in the selected regions. The results of the skills demand and supply analysis at regional and local levels informed the decision makers and stakeholders on the best options for establishing regional VET centres, including the identification of priority education profiles in line with the projections of labour demand.

The underlying demographic and economic characteristics of the three regions have been shown in sufficient detail to assess the potential of labour market development, focusing on a number of aspects, such as skills demand and supply, skills needs and gaps and developmental aspects that stimulate or, on the contrary, contain opportunities for employment.

All three regions possess high potential to secure workers since their percentage of working-age population (around 74%) is markedly higher than the national average (around 70%). Internal net migration flows (between the regions of the country) are directed outwards in all three cases. The highest outflow is from the North East region. An increasing trend for net international migrations is also observed for the South West and North East regions. The resulting forecast for migration flows in 2020 (international as well as internal) are directed inwards in the South West and Polog regions and outwards the North East region. Data for migrations should be treated with caution since there are indications that international emigration is substantially underreported.

All three regions have a substantially smaller GDP per capita than the national average. However, the South West region is slowly progressing towards convergence with the national level. The Polog region remains at the same level (about half of the national), while the GDP of the North East region is falling rapidly.

Tight labour market opportunities are reflected by the level of unemployment rates in all three regions that are higher than the country average. In the examined regions the unemployment rates are projected to remain higher than the national level. The most worrying situation is expected to be that of the North East region, where the unemployment rate will remain over 32%.

Significant changes in the structure of employment by sector in South West, Polog and North East have occurred in recent years. Thus, some sectors are facing a sharp decline, while others are growing rapidly. In some cases, specific sectors in a given region are waning due to the transfer of the workforce to other expanding sectors, as is the case in the Polog region where the agriculture, forestry and fishing sector is declining while the areas of manufacturing and accommodation and food service activities are growing rapidly. These structural changes in the economy are typically the result of modernisation, and possibly indicative of a stronger demand for higher skills. In the case of the South West region, several sectors are declining or growing only slowly. A marked decline in the transportation and storage sector is observed, while solid growth is seen only in construction. In this case, the development of employment sectors appears to be inhibited by inconvenient external conditions, in particular the underdeveloped transportation infrastructure.



In order to shed additional light on the issue of economic growth, the forecast of gross value added by sector of activity in each region (Annex 1, Tables A1.4a, A1.4b, A1.4c and A1.4d) reveals sometimes divergent trends in the three regions as compared to the overall economic evolution at the national level. For example, in all three regions studied the information and communication sector is declining, contrary to the case at the national level, where systematic growth is observed. The sectors of professional, scientific and technical activities, and administrative and support services are growing only in the Polog region, while in the South West and North East regions they appear to be in decline. Particularly noteworthy is that in the Polog and South West regions the sectors of mining, manufacturing, electricity, gas, and water supply, sewerage, waste management and remediation activities are growing, while in the North East region they are showing a steep decline. As discussed above, limiting factors are found in insufficient development of the infrastructure required for various economic activities.

In conclusion, in addition to the expectations of economic development in the regions on the part of businesses and VET providers, thanks to factors such as building better links between the education offer and labour market demand, external influences limiting growth have to be carefully considered.

Based on the qualitative component of the study, the organisations of employers/chambers of commerce state that are highly involved in collaboration with educational institutions and seem to be equally committed in the future to cooperation with the regional VET centres that will be set up in the regions studied. ESA and municipalities also support the development of regional VET centres in their regions. The specific sectors and profiles to be covered by the regional VET centres are almost the same as those encompassed by ESA and the organisations of employers/chambers of commerce. All the target groups demonstrated an interest in becoming involved in building stronger cooperative links between the VET providers and labour market players. The role of the regional centres was identified as particularly important, and the need for setting up regional VET centres was considered urgent. It was thus anticipated that they would be launched in the short or medium term.

Based on the experience of this study, it is concluded that the same methodology and analysis can also be performed successfully in the other regions of the country. Existing sources of reliable data have already been identified and the methods used here can be applied to the data of other regions.

Substantial variations in sectoral employment over the short to long term signal a need to boost the flexibility of the workforce to respond to the needs of a changing economy. The educational system also must adapt to these emerging needs by providing appropriate VET services for training and retraining. Besides the current demand for workers with the skills appropriate to specific economic activities, expected trends and variations in employment by sector should be taken into consideration when planning the education profiles and number of students to be enrolled in specific VET programmes.

Investments in infrastructure and attracting big investors to the regions also have to be considered when planning education programmes. The education system can play a huge role in anticipating the future skills requirements in a given region and act in such a way as to attract and stimulate new investment and jobs. These circumstances need to be considered when establishing the regional VET centres, which have to be ready to implement new or updated education and training programmes in time to meet the needs of employers and learners.

The future skill needs in the regions considered here are a matter of interest for all the actors involved in establishing stronger links between the education system (in particular VET provision) and employment. Awareness of the importance of establishing such effective links is relatively high, and all



the focus groups demonstrated exceptional devotion to contributing to the process of improving the current condition of the labour market.

The findings of both quantitative and qualitative research signal a number of priorities for action to be considered in implementing education reforms or promoting employment and regional development strategies, and in enhancing cooperation among stakeholders in human capital development.

- To enhance the provision of skills development programmes, be it in initial or continuing education and training, to match expanding sectors and the needs of learners at regional level. The structural reform of the VET system in North Macedonia foresees, among others, the establishment of regional VET centres as hubs for enhancing the links between education and the world of work and the provision of education and training in line with the regional and local labour market needs and responding to adults' upskilling/reskilling needs. Regional dynamics, in terms of growing or declining sectors, vary and the level and relevance of education are key predictors of employment. Development opportunities, such as investments in infrastructure, may boost certain sectors and change quite rapidly the skills and education profiles that are in demand. Therefore, the education offer should be flexible and agile enough to respond to such changes.
- To consolidate and expand stakeholders' cooperation at local and regional levels, and to consider the role of the regional VET centres in promoting stronger collaboration with the private sector, social partners and other relevant actors, such as investment, development or innovation agencies, academics, non-governmental organisations.

The stakeholders' survey confirmed the willingness and availability to cooperate of key stakeholders, namely employment organisations, local employment offices, vocational schools and other public or private training providers, local authorities/municipalities, including local economic and social councils. Many stakeholders perceive the establishment of regional VET centres as a positive development to enhance cooperation at local and regional levels and create stronger links between schools, companies and employment offices. Therefore, in conceptualising the regional VET centres, decision makers and stakeholders could define clear roles and responsibilities to promote or contribute to local and regional cooperation in skills demand analysis, education offer planning or practical training and work-based learning consolidation.

 To embed regular analyses of skills supply and demand at regional and local levels into the labour market and skills information system.

Over the years North Macedonia has developed a labour market information system with particular focus on the long-term forecasting of economic and employment trends and evolution of vacancies. Skills demand is an implicit element of this system. However, various assessments have highlighted the need to consolidate the analytical component of education policy making, be it to back up education planning, or monitoring and evaluation of education outcomes. In general, macro-level analyses are relatively straightforward to implement and the information and statistical basis is well developed. Capturing the regional and, more particularly, the local dimension of skills supply and demand, however, has proved complex due to the low reliability of survey data, from very detailed disaggregation (e.g. low number of data at the level of regions), or unavailability of data at municipal/local level. Therefore, additional qualitative research instruments (e.g. interviews and questionnaires) were developed to complement the quantitative analysis. A sound information basis, well grounded in local and regional contexts, is essential to define education profiles and overall VET planning. Hence, regional analyses on skills supply and demand need to continue to provide the necessary background for the establishment of regional



VET centres in the other regions of the country. This type of analysis could be carried out at regular intervals to inform education planning, but the lack of resources is a major constraint; stakeholders' enhanced cooperation at regional level may help address the sustainability challenge. Capacity-building actions for staff of education, employment and municipal institutions and social partners at regional and local levels is also advisable.



ANNEXES

Annex 1. Additional data

TABLE A1.1 EMPLOYED PEOPLE BY SECTOR - NATIONAL LEVEL, 2016-18

Sector	2016	2017	2018
Total	723 550	740 648	759 054
Agriculture, forestry and fishing	120 303	120 311	119 337
Mining and quarrying	6 416	6 576	6 509
Manufacturing	137 615	143 253	150 820
Electricity, gas, steam and air conditioning supply	10 358	10 407	10 324
Water supply, sewerage, waste management and remediation activities	12 797	12 651	14 120
Construction	52 140	53 391	56 263
Wholesale and retail trade, repair of motor vehicles and motorcycles	104 514	108 869	108 726
Transportation and storage	36 258	37 769	39 134
Accommodation and food service activities	25 446	28 570	30 964
Information and communication	13 600	13 587	12 995
Financial and insurance activities	10 927	10 817	8 095
Real estate activities	1 615	1 702	1 330
Professional, scientific and technical activities	13 496	13 350	17 332
Administrative and support service activities	14 335	13 928	14 612
Public administration and defence, compulsory social security	53 969	53 143	52 900
Education	42 569	43 973	44 696
Human health and social work activities	39 089	40 807	42 760
Arts, entertainment and recreation	12 584	13 262	12 334
Other service activities	13 538	12 604	13 059
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	946	864	863
Activities of extraterritorial organisations and bodies	1 035	814	1 879

Source: SSO



TABLE A1.2 EMPLOYED PEOPLE BY SECTOR – NATIONAL LEVEL, FORECASTING FOR 2020,2025 AND 2030

Sector	2020	2025	2030
Total	794 340	883 098	971 857
Agriculture, forestry and fishing	118 534	116 118	113 701
Mining and quarrying	6 641	6 875	7 109
Manufacturing	163 704	196 716	229 729
Electricity, gas, steam and air conditioning supply	10 312	10 228	10 143
Water supply, sewerage, waste management and remediation activities	15 174	18 481	21 788
Construction	60 115	70 421	80 727
Wholesale and retail trade, repair of motor vehicles and motorcycles	113 687	124 216	134 746
Transportation and storage	42 034	49 223	56 412
Accommodation and food service activities	36 604	50 401	64 197
Information and communication	12 487	10 975	9 463
Financial and insurance activities	5 699	threatened	threatened
Real estate activities	1 122	410	threatened
Professional, scientific and technical activities	20 481	30 072	39 663
Administrative and support service activities	14 708	15 402	16 095
Public administration and defence, compulsory social security	51 733	49 060	46 387
Education	46 938	52 257	57 576
Human health and social work activities	46 392	55 570	64 748
Arts, entertainment and recreation	12 350	11 723	11 096
Other service activities	12 348	11 149	9 951
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	767	559	352
Activities of extraterritorial organisations and bodies	2 509	4 620	6 731



Sectors	Occupied posts (number)	Job vacancies (number)	Job vacancy rate (%)
Total	505 042	9 100	1.77
Mining and quarrying	4 033	46	1.13
Manufacturing	122 415	2 401	1.92
Electricity, gas, steam and air conditioning supply	8 132	10	0.12
Water supply, sewerage, waste management and remediation activities	11 082	37	0.33
Construction	27 482	562	2.01
Wholesale and retail trade, repair of motor vehicles and motorcycles	84 543	1 636	1.90
Transportation and storage	30 514	798	2.55
Accommodation and food service activities	22 567	633	2.73
Information and communication	15 121	343	2.21
Financial and insurance activities	9 888	112	1.12
Real estate activities	2 246	19	0.82
Professional, scientific and technical activities	15 724	265	1.66
Administrative and support service activities	21 456	574	2.60
Public administration and defence, compulsory social security	39 649	955	2.35
Education	35 876	314	0.87
Human health and social work activities	36 907	208	0.56
Arts, entertainment and recreation	12 335	136	1.09
Other service activities	5 073	50	0.98
Source: SSO			

TABLE A1.3 OCCUPIED POSTS AND JOB VACANCIES BY SECTOR, FIRST QUARTER 2019



TABLE A1.4A GROSS VALUE ADDED BY SECTOR OF ACTIVITY, NACE REV. 2, NATIONAL LEVEL, BY YEAR (IN MILLION DENARS)

Sector	2014	2015	2016	2020	2025	2030
Method	Reported SS	SO		Own forecasting		
Total	458 128	488 408	515 601	631 062	774 744	918 427
A. Agriculture, forestry and fishing	53 701	54 369	54 559	56 355	58 500	60 645
B–E. Mining, manufacturing, electricity, gas and water supply, sewerage, waste management, remediation activities	83 865	94 027	101 425	137 006	180 906	224 806
F. Construction	36 555	39 687	41 106	50 494	61 871	73 249
G–I. Wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage; accommodation and food service activities	96 001	102 856	113 050	146 592	189 214	231 837
J. Information and communication	15 992	16 478	18 165	22 311	27 743	33 176
K. Financial and insurance activities	15 418	17 045	17 582	22 092	27 502	32 912
L. Real estate activities	59 933	61 518	59 635	59 617	58 872	58 127
M–N. Professional, scientific and technical activities, administrative and support service activities	16 987	18 012	20 082	26 098	33 835	41 573
O–Q. Public administration and defence, compulsory social security, education, human health and social work activities	65 257	69 360	73 676	90 479	111 526	132 574
R–U. Arts, entertainment and recreation, repair of household good and other services	14 419	15 054	16 320	20 017	24 769	29 522

Source: Calculation from this report



TABLE A1.4B GROSS VALUE ADDED BY SECTOR OF ACTIVITY, NACE REV. 2, SOUTH WEST REGION, BY YEAR (IN MILLION DENARS)

Sector	2014	2015	2016	2020	2025	2030
Method	Reported SS	60		Own forecasting		
Total	36 146	40 909	42 311	55 201	70 614	86 026
A. Agriculture, forestry and fishing	2 282	2 654	2 574	3 233	3 963	4 693
B–E. Mining, manufacturing, electricity, gas and water supply, sewerage, waste management, remediation activities	6 145	8 879	6 669	8 541	9 851	11 161
F. Construction	2 400	3 262	3 559	5 971	8 869	11 766
G–I. Wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage; accommodation and food service activities	9 791	10 642	11 362	14 526	18 453	22 381
J. Information and communication	563	137	432	50	threatened	threatened
K. Financial and insurance activities	787	442	1 606	2 993	5 040	7 088
L. Real estate activities	6 874	6 945	7 584	8 909	10 684	12 459
M–N. Professional, scientific and technical activities, administrative and support service activities	896	897	746	471	96	threatened
O–Q. Public administration and defence, compulsory social security, education, human health and social work activities	5 406	5 910	6 922	9 869	13 659	17 449
R–U. Arts, entertainment and recreation, repair of household good and other services	1 001	1 141	855	634	269	threatened



TABLE A1.4C GROSS VALUE ADDED BY SECTOR OF ACTIVITY, NACE REV. 2, POLOG REGION, BY YEAR (IN MILLION DENARS)

Sector	2014	2015	2016	2020	2025	2030
Method	Reported SS	60		Own forecas	ting	
Total	32 485	34 055	36 830	45 319	56 182	67 044
A. Agriculture, forestry and fishing	5 786	5 757	5 132	3 923	2 288	653
B–E. Mining, manufacturing, electricity, gas and water supply, sewerage, waste management, remediation activities	3 482	4 038	3 839	4 679	5 571	6 464
F. Construction	1 602	1 864	2 076	3 032	4 217	5 402
G–I. Wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage, accommodation and food service activities	6 277	6 666	7 707	10 458	14 033	17 608
J. Information and communication	138	127	64	threatened	threatened	threatened
K. Financial and insurance activities	192	249	182	183	158	133
L. Real estate activities	7 227	7 439	8 146	9 902	12 199	14 497
M–N. Professional, scientific and technical activities, administrative and support service activities	865	967	1 166	1 752	2 504	3 257
O–Q. Public administration and defence, compulsory social security, education, human health and social work activities	6 164	6 107	7 917	11 112	15 494	19 877
R–U. Arts, entertainment and recreation, repair of household goods and other services	751	841	601	356	threatened	threatened



TABLE A1.4D GROSS VALUE ADDED BY SECTOR OF ACTIVITY, NACE REV. 2, NORTH EAST REGION, BY YEAR (IN MILLION DENARS)

Sector	2014	2015	2016	2020	2025	2030
Method	Reported SSO			Own forecasting		
Total	22 733	25 275	25 706	32 004	39 436	46 869
A. Agriculture, forestry and fishing	1 961	2 215	2 337	3 111	4 051	4 991
B–E. Mining, manufacturing, electricity, gas and water supply, sewerage, waste management, remediation activities	4 041	4 477	3 817	3 552	2 992	2 432
F. Construction	1 991	2 286	2 250	2 823	3 471	4 118
G–I. Wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage, accommodation and food service activities	6 490	7 238	7 045	8 312	9 699	11 087
J. Information and communication	185	156	165	119	69	19
K. Financial and insurance activities	72	101	535	1 394	2 551	3 709
L. Real estate activities	3 697	3 783	4 109	4 893	5 923	6 953
M–N. Professional, scientific and technical activities, administrative and support service activities	651	438	435	threatened	threatened	threatened
O–Q. Public administration and defence, compulsory social security, education, human health and social work activities	3 181	4 070	4 551	7 359	10 784	14 209
R–U. Arts, entertainment and recreation, repair of household goods and other services	464	509	463	476	474	471



Annex 2. Questionnaires

Questionnaire 1. Employers

- Q1: Company name
- Q2: Position of the interviewee
- Q3: What are the main activities of your enterprise/business (hereinafter company)?
- Q4: Is your company
 - (a) International (b) National (c) Other (specify)
- Q5: What is the type of your company?
 - - (a) Sole proprietorship
 - (b) Limited liability company (LLC)
 - (c) Open/closed joint-stock company
 - (d) Branch (company name)
 - (e) Other (specify)
- Q6: Would you describe your company as:
 - │ (a) Start-up
 - (b) Mature
 - (c) Growing
 - (d) Reducing its turnover
 - (e) Diversifying its business
- Q7: What are the challenges, new or ongoing, that your company faces in the present and is to encounter over the next 12 months, and the nature of these (multiple answers are possible)?
 - (a) Manufacturing (technologies, working methods, digitalisation)
 - (b) Production (materials, quality, etc.)
 - (c) Increased competition from inside/outside the country
 - (d) Attracting appropriately skilled personnel
 (e) Labour costs

 - (f) Cash flow
 - (g) Other (specify)
- Q8: What is the number of personnel working in your company?
- Q9: What is the level of importance you attach to workers' skills attained by vocational education and training?
 - \Box (a) High; \Box (b) Moderate; \Box (c) Low
- Q10: Does the current number of your employees satisfy your needs? (a) Yes; (b) No
- Q11: What professions/occupations do you require during the next year? [list of available educational profiles provided in the country]



Q12: Do you have a medium-term development plan including the needs for specific VET profiles?

□ (a) Yes; □ (b) No IF NO \rightarrow Q14

Q13: What professions/occupations do you require during next five years? [list of available educational profiles provided in the country]

Q14: Are you satisfied with the current qualifications (proficiency) of your employees?

□ (a) Yes; □ (b) No

Q15: In which of the general/key and technical/professional skills do you experience problems among your current employees? _____

Q16: If your employees have any retraining or skills upgrading courses, please describe for which skills, how many people, when, where: ______

Q17: On a scale of 1 to 5, assess the quality of adult education and training services provided by vocational schools:

 \Box (a) 5; \Box (b) 4; \Box (c) 3; \Box (d) 2; \Box (e) 1; \Box (f) No previous experience; \Box (g) Difficult to assess

Q18: On a scale of 1 to 5, assess the quality of adult education and training services provided by other providers (adult education centres, workers' universities, etc.)

 \Box (a) 5; \Box (b) 4; \Box (c) 3; \Box (d) 2; \Box (e) 1; \Box (f) No previous experience; \Box (g) Difficult to assess

Q19: Over the past 24 months have you recruited or at least tried to recruit personnel? Please list the professions/occupations: ______

Q20: For which of the above professions/occupations did you not succeed in recruiting appropriate personnel?

Q21: Which of the following reasons would best explain why you were not able to recruit the personnel you needed (multiple answers are possible)?

- (a) Limited number of applications
- (b) Limited number of candidates with suitable qualifications and work experience
- (c) Employment conditions and/or salaries were not attractive enough
- (d) Other (specify)

Q22: How difficult or how easy is it to find the following key skills in your region (a – very easy; b – easy; c – somewhat difficult; d – difficult; e – very difficult; f – difficult to assess)?

- (a) Basic computer literacy skills
- (b) Customer handling skills _____
- (c) Communication skills
- (d) Foreign language skills _____
- (e) Management skills _____

Q23: Please indicate the importance you attach to the following characteristics when selecting new employees (a – very important; b – important; c – somewhat important; d – not important; e – difficult to assess):

- (a) Work experience and professional competences _____
- (b) Attitude to work _
- (c) Education (formal qualification)
- (d) Other (specify)



Q24: Who do you apply to if there is a need for staff (multiple answers are possible)?

- (a) Employment agencies
- (b) Educational/training institutions
- (c) Media that host advertisements
- (d) Relatives and acquaintances
- (e) Other (specify)

Q25: Which is the best way for employers to recruit new workers with a specific education profile:

- (a) Through ESA
- (b) Through vocational schools
- (c) Through adult education providers (AEPs)
- (d) Other (specify)

Q26: Could you briefly describe your past experience with ESA in hiring workers?

Q27: Could you briefly describe your past experience with vocational schools in hiring workers?

Q28: Does your company have regular contacts with one or more vocational schools and/or AEPs?

□ (a) Yes; □ (b) No IF NO \rightarrow Q30

Q29: For what purpose?

(a) Recruitment

- (b) Participation in testing of students/trainees
- (c) Programme/curriculum development
- (d) Further training of your company employees
- (e) Provision of practical training (internships) for vocational school students/AEP trainees
- (f) Other (specify)

Q30: According to your experience:

- Do the practical skills of graduates of vocational schools/AEPs match your company's requirements?

 (a) Yes;
 (b) No
- Do the graduates have adequate theoretical knowledge?
 (a) Yes;
 (b) No
- · What do you find particularly satisfactory about vocational schools/AEPs training?
- What particular aspect of vocational schools/AEPs training should be improved?

Q31: Are you interested in the possibility of collaboration with vocational schools in tailoring internship programmes?

□ (a) Strongly yes; □ (b) Moderately yes; □ (c) No

Q32: Are you interested in the possibility of collaboration with vocational schools in tailoring internship programmes?

 \Box (a) Strongly yes; \Box (b) Moderately yes; \Box (c) No

Q33: Have you ever provided any assistance to a vocational school or an AEP?

□ (a) Yes; □ (b) No IF NO \rightarrow Q36



Q34: To which one?

(a) Vocational school

(b) AEP

Q35: What exactly was your assistance (multiple answers are possible)?

- (a) Provision of training for teaching and/or administrative personnel
- (b) Provision of funds
- (c) Provision of properties, industrial premises, equipment for practical training of students
- (d) Provision of specialists
- (e) Other (specify)

Q36: Are you ready to assist any vocational school/AEP in any of the following ways (multiple answers are possible)?

- (a) Provision of training for teaching and/or administrative personnel
- (b) Provision of funds
- (c) Provision of properties, industrial premises, equipment for practical training of students
- (d) Provision of specialists
- (e) Other (specify)

Q37: Do you expect to collaborate with vocational schools directly or through central state institutions?

\square	(a)	Directly
	(\sim)	

- (b) Through central state institutions
- (c) Equally for both

Q38: If your company plans any fixed capital investment in the next 12 months, please specify for which purposes you plan to invest (multiple answers are possible)? What will be the percentage of the total investment for each type of investment?

🗌 (a) Procurement and/or modernisation of machinery, equipment
(b) Enlargement, modernisation and/or procurement of buildings
(c) Human capital

(d) Other (specify)

Q39: What would you suggest for improving cooperation with the vocational schools, AEPs, the municipality, regional authorities and other institutions?

Q40: How often you use the website zanimanje.mk?

 \Box (a) Regularly; \Box (b) Occasionally; \Box (c) Never

Q41: **Open floor**: What are your thoughts about the needs and challenges of education-business cooperation, which have not been given in the answers to the previous questions?



Questionnaire 2. Employment Service Agency (ESA)

Q1: Municipality ____

Q2: Position of the interviewee ____

Q3: How important is a strong link between VET and business?

(a) Extremely important

(b) Very important

(c) Moderately important

(d) Not important

(e) Difficult to assess

Q4: Based on your experience, what is the main reason why unemployed graduates from vocational schools do not apply for jobs put forward by ESA?

(a) Not having the required skills stated in the call for applications

(b) Low offered salary

(c) Not available for work in the proposed period

(d) Other

Q5: Does ESA plan activities aimed at attracting more unemployed graduates from vocational schools to register and later find employment through ESA calls for applications?

🗌 (a) Yes; 🗌 (b) no

Q6: Does ESA plan to introduce specific programmes in order to attain a much higher share of the new employment of graduates from vocational schools to be realised through its activities, compared to the other channels?

□ (a) Yes; □ (b) No

Q7: Does ESA consider that it is particularly important to focus attention on registered unemployed graduates from vocational schools who remain unemployed for more than a year?

□ (a) Yes; □ (b) No

Q8: Does ESA undertake activities intending to motivate employers to create positions requiring the VET profiles of the registered unemployed who have been waiting more than a year for a job?

□ (a) Yes; □ (b) No

Q9: If you have data for the number of **first-time employed** and those **employed from a previous job** (irrespective of the length of the pause between the previous and the new job) for the previous year (2018) at the national level, please complete below:

Number of first-time employed: _____

Number of employed from a previous job: _____

Q10: Does ESA consider that closer cooperation with vocational schools is needed in order to accelerate the employment of graduates from vocational schools?

□ (a) Yes; □ (b) No

Q11: Does ESA consider that the capacities of the vocational schools should be increased in order to better match the needs of employers?

🗌 (a) Yes; 🗌 (b) No



Q12: Is ESA ready to participate in the creation of a possible new regulation defining more precisely the roles shared by and the collaboration between ESA and vocational schools in connecting education and business?

□ (a) Yes; □ (b) No

Q13: Does ESA see the need or opportunity to develop a centre of vocational excellence (CoVE) which would address a particular growing sector?

□ (a) Yes; □ (b) No

Q14: For which specific sectors and specific profiles is a CoVE needed in your municipality?

Q15: What is the evidence for the need for such skills provision?

Q16: What is the timeframe for the development of a needed CoVE?

(a) 1 to 2 years (short)
(b) Up to 5 years (medium)
(c) More than 5 years (long term)



Questionnaire 3. Organisations of employers and Chambers of commerce

Q1: Organisation of employers/chamber of commerce name ____

Q2: Position of the interviewee _

Q3: What is the number of companies who are members in your organisation of employers/ chamber of commerce?

Q4: How important are strong links between VET and business?

- (a) Extremely important
- (b) Very important
- (c) Moderately important
- (d) Not important
- (e) Difficult to assess

Q5: How important is the participation of your organisation of employers/chamber of commerce in the links between the education sector and business?

- (a) Extremely important
- (b) Very important
- (c) Moderately important
- (d) Not important
- (e) Difficult to assess

Q6: How important is it to have vocational schools teaching VET profiles for local (municipality) needs?

- (a) Extremely important
- (b) Very important
- (c) Moderately important
- (d) Not important
- (e) Difficult to assess

Q7: How important is it to have vocational schools teaching VET profiles for local (regional) needs?

- (a) Extremely important
- (b) Very important
- (c) Moderately important
- 🗌 (d) Not important
- (e) Difficult to assess

Q8: What is the best way for employers to recruit new workers with a specific education profile?

- (a) Through ESA
- (b) Through vocational schools
- (c) Through AEPs
- (d) Other (specify) _

Q9: Where do you see your role in the process of recruiting new employees for companies? (specify) ______

Q10: When a shortage of workers with specific education profiles/skills required for a type of job is observed, does your employers' association/chamber of commerce advise its members to increase the salaries for this position?

□ (a) Yes; □ (b) No



Q11: When negotiating with trade unions, what is the level of importance they attach to the employment of graduates from vocational schools?



Q12: If you have intensive organised activities aimed at creating links between the education sector and business, we would be grateful if you could provide a description of these activities or the outputs that you consider could be shared with us.



Questionnaire 4. Municipalities/local economic councils

Q1: Municipality ____

Q2: Position of the interviewee _

Q3: How important is it to have vocational schools teaching VET profiles for local (municipality) needs?



- (b) Very important
- (c) Moderately important
- (d) Not important
- (e) Difficult to assess

Q4: How important is it to have vocational schools teaching VET profiles for regional needs?

- (a) Extremely important
- (b) Very important
- (c) Moderately important
- (d) Not important
- \Box (e) Difficult to assess.

Q5: On a scale of 1 to 5, assess the quality of adult education and training services provided by vocational schools in your municipality (if there are any):

 \Box (a) 5; \Box (b) 4; \Box (c) 3; \Box (d) 2; \Box (e) 1; \Box (f) No previous experience; \Box (g) Difficult to assess

Q6: On a scale of 1 to 5, assess the quality of adult education and training services provided by vocational schools in your municipality (if there are any):

 \Box (a) 5; \Box (b) 4; \Box (c) 3; \Box (d) 2; \Box (e) 1; \Box (f) No previous experience; \Box (g) Difficult to assess

Q7: Does your municipality undertake intensive activities aimed at encouraging leading companies/ investors to invest in your municipality?

□ (a) Yes; (b) □ No IF NO \rightarrow Q9

Q8: Are you satisfied with the results of activities aimed at encouraging leading companies/investors to invest in your municipality?

(a) Yes; (b) Partly; (c) No

Q9: How much are investors interested in the VET profiles taught in schools in your municipality?

(a) Very much; (b) Partly; (c) A little; (d) Not at all; (e) They do not express themselves

Q10: Are you willing to collaborate with local vocational schools in activities aimed at encouraging leading companies/investors to invest in your municipality?

(a) Yes; (b) No

Q11: Does your municipality find that there is a need to develop a centre of vocational excellence (CoVE) in your region, in order to respond to the demands of some locally growing sector?

□ (a) Yes; (b) □ No IF NO \rightarrow Q15:

Q12: For which specific sectors and specific profiles is a CoVE needed in your municipality/region?



- Q13: What is evidence for the need for such skills provision?
- Q14: What is the timeframe for the development of a needed CoVE?
 - (a) 1 to 2 years (short)
 - (b) Up to 5 years (medium)
 - \Box (c) More than 5 years (long term)

Q15: If you have intensive organised activities aimed at creating links between the education sector and business at the municipality level, we would be grateful if you could provide a description of these activities or the outputs that you consider could be shared with us.



ACRONYMS AND ABBREVIATIONS

AEP	Adult education provider
CoVE	Centre of vocational excellence
ESA	Employment Service Agency of the Republic of North Macedonia
ETF	European Training Foundation
EU	European Union
GDP	Gross domestic product
NACE	Statistical classification of economic activities in the European Community
SSO	State Statistical Office of the Republic of North Macedonia
VET	Vocational education and training



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