Factbook Education System: Armenia

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Chair of Education Systems

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CES Chair of Education Systems

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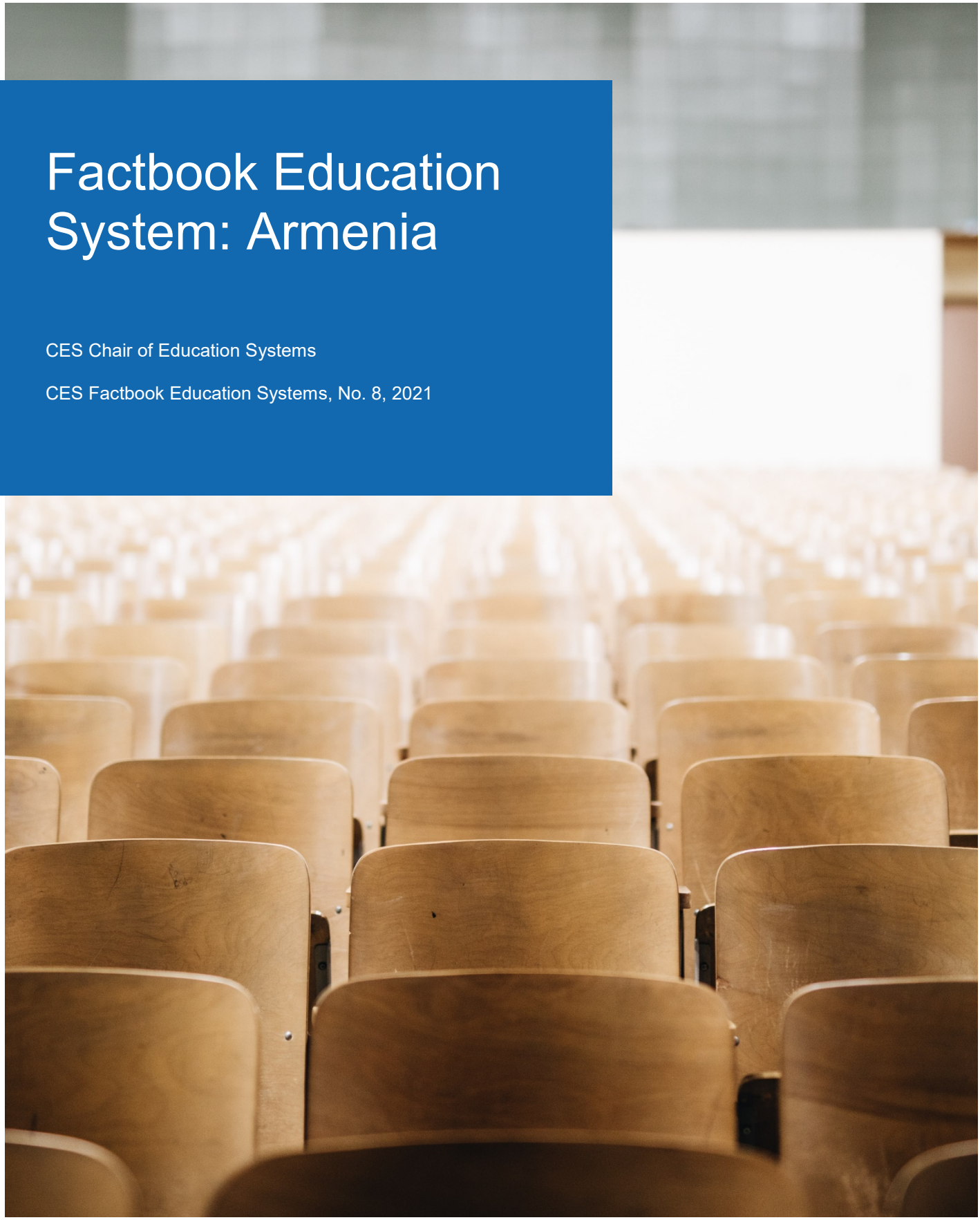

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Editing and Acknowledgement

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List of Abbreviations

ANQA	National Centre for Professional Education Quality Assurance
ECTS	European Credit Transfer System
ETF	European Training Foundation
GCI	Global Competitiveness Index
GII	Global Innovation Index
GIZ	Gesellschaft für International Zusammenarbeit
GDP	Gross Domestic Product
ICT	Information and Communication Technology
ILO	International Labour Organization
IT	Information Technology
IVET	Initial Vocational Education and Training
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
MoEDI	Ministry of Economic Development and Investments
MoESCS	Ministry of Education, Science, Culture and Sport
MoLSI	Ministry of Labour and Social Issues
NGO	Non-Governmental Organisation
NIE	National Institute of Education
OECD	Organisation for Economic Co-operation and Development
PET	Professional Education and Training
PPP	Purchasing Power Parity
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
VPET	Vocational Professional Education and Training
VPETA	Vocational and Professional Education and Training Act
WEF	World Economic Forum
YLMI	Youth Labour Market Index

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Foreword

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises in 2008/9 have put pressure on countries to upgrade the skills of their workforces. Consequently, vocational education and training (VET) has received growing attention in recent years, especially amongst policy-makers. For example, the European Commission defined common objectives and an action plan for the development of VET systems in European countries in the Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for 2011-2020 (European Commission, 2010). In addition, a growing number of US states and other industrialized, transition, and developing countries (for example Hong Kong, Singapore, Chile, Costa Rica, Benin and Nepal) are interested in either implementing VET systems or making their VET system more labour-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labour market by simultaneously providing work experience, remuneration and formal education degrees at the secondary education level. If the VET system is optimally designed, VET providers are in constant dialogue with the demand-side of the labour market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labour market. Besides practical skills, VET systems also foster soft-skills such as emotional intelligence, reliability, accuracy, precision, and responsibility, which are important attributes for success in the labour market. Depending on the design and permeability of the education system, VET may also provide access to tertiary level education (according to the ISCED classification): either general education at the tertiary A level or professional education and training (PET) at the tertiary B level. PET provides occupation-specific qualifications that prepare students for highly technical and managerial positions. VET and PET systems are often referred to together as “vocational and professional education training (VPET)” systems.

Few countries have elaborate and efficient VPET systems. Among these is the Swiss VPET system, which is an example of an education system that successfully matches market supply and demand. The Swiss VPET system efficiently introduces adolescents to the labour market, as shown by Switzerland’s 2007-2017 average youth unemployment rate of 8.1 percent compared to 14.8 percent for the OECD average (OECD, 2017).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the CES Education System Factbook Series[1] is to provide information about the education systems of countries across the world, with a special focus on vocational and professional education and training.

In the CES Factbook Education Systems: Armenia, we describe Armenia’s vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

The Factbook is structured as follows: First, we provide an overview of Armenia’s economy, labour market, and political system. The second part is dedicated to the description of the formal education

[1] From 2013 to 2019, the Factbooks were produced within the framework of the Education Systems research division at the KOF Swiss Economic Institute. From 2020 they will be produced by the Chair of Education Systems (CES) group.

system. The third section explains Armenia's vocational education system. The last section offers a perspective on Armenia's recent education reforms and challenges to be faced in the future.

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The Education System Factbooks have to be regarded as work in progress. The authors do not claim completeness of the information which has been collected carefully and in all conscience. Any suggestions for improvement are highly welcome!

Contact: factbook@ethz.ch

1 Armenia's Economy and Political System

One of the main purposes of an education system is to provide the future workforce with the skills needed in the labour market. The particularities of a country's economy and labour market are important factors determining the current and future demand for skills. Therefore, these are briefly described in the first chapter of this Factbook. In addition, this chapter provides an overview of Armenia's political system with an emphasis on the description of the education politics. Table 1 reports key statistics and information about Armenia, which are further discussed in this chapter.

Table 1: Key Statistics and Information about Armenia

Category	Outcome
Population	2,958,000
Area	29,743 km^2
Location	Eurasia
Capital City	Yerevan
Government	Unitary parliamentary republic
Official Language	Armenian
National Currency	Dram

Source: own table based on BBC (2020), Britannica (2020) and the World Bank (2021).

1.1 Armenia's Economy

Armenia is a small landlocked developing country in the Transcaucasia region bordering Turkey, Georgia, Azerbaijan and Iran (Britannica, 2020; Deutsche Förderungsgemeinschaft, 2020). Its gross domestic product (GDP) per capita is US$4,623, which equals US$14,258 in purchasing power parity (PPP; 2019). To put this into perspective, Georgia has a GDP per capita (PPP) of US$15,655 (2019). Furthermore, compared to the Organisation for Economic Co-operation and Development (OECD) members' average GDP per capita (PPP) of US$46,577, Armenia's is significantly lower (World Bank, 2021).

While Armenia's GDP declined from 1990 to 1992 after the country declared its sovereignty in 1990 and its independence in 1991, its economy has been growing strongly ever since. The average annual growth rate from 1990 to 2019 was 3.49%. This is significantly higher than the average annual growth rate of its neighbour Georgia (1.12%) as well as the OECD members' average (2.09%; World Bank, 2021).

Table 2: Value Added and Employment by Sector, 2019

Sector	Armenia: Value Added (%)[2]	EU-28: Value Added (%)	Armenia: Employment (%)	EU-28: Employment (%)
Primary sector	**12.0**	**1.6**	**21.8**	**5.3**
Agriculture, hunting and forestry, fishing	12.0	1.6	21.8	5.3
Secondary sector	**24.3**	**24.5**	**20.6**	**22.7**
Manufacturing, mining and quarrying, other industrial activities	18.1	18.8	11.7	15.7
Of which: manufacturing	11.7	15.5	10.5	14.1
Construction	6.2	5.7	8.9	7.0
Tertiary sector	**54.3**	**73.9**	**55.2**	**72.0**
Wholesale and retail trade, repairs, hotels and restaurants, transport, information and communication	20.0	24.4	23.4	27.3
Financial intermediation; real estate, renting and business activities	15.5	27.5	4.4	15.2
Public administration, defence, education, health, other service activities	18.8	22.0	27.4	29.5

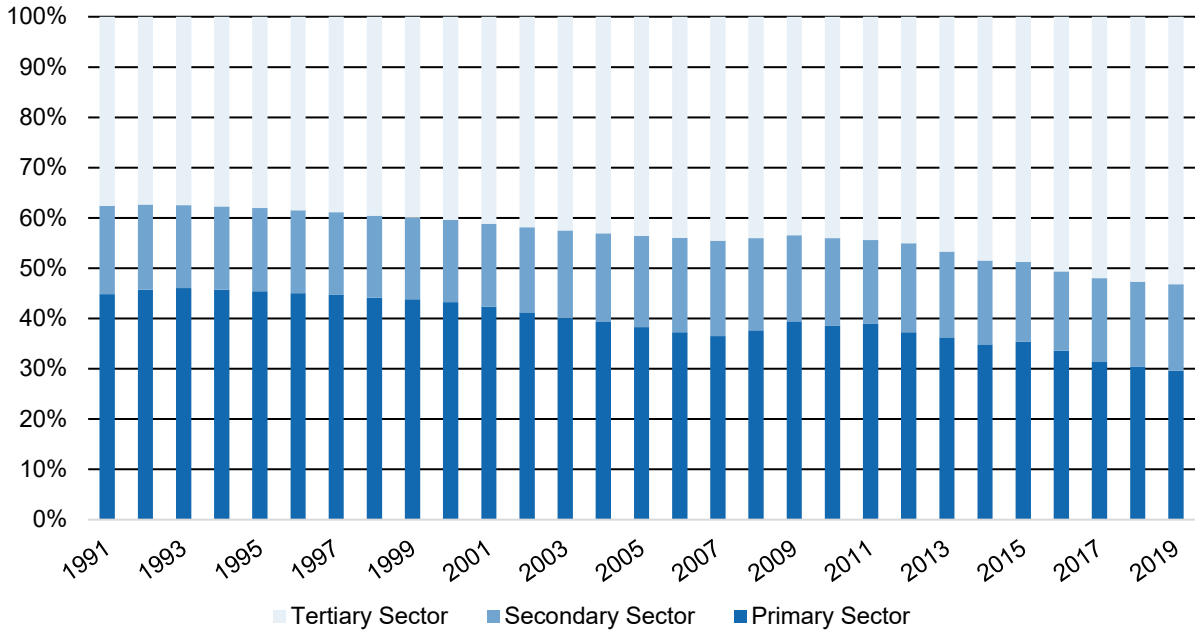
Source: own table based on the Statistical Committee of the Republic of Armenia (2020) and Eurostat (2021).

Table 2 shows Armenia and the EU-28's value added and employment split into the three sectors as a percentage of the total in 2019. The table depicts more evenly distributed value added and employment across the three sectors in Armenia compared to the EU-28 countries, which is typical for developing countries (Majid, 2005).

Comparing the numbers in more detail shows that Armenia's primary sector constitutes a considerably larger part of the overall economy than is the case for the EU-28 countries. With 12% of value added and 21.8% of employment, the primary sector's shares in the economy are significantly higher than in the EU-28 countries (1.6% and 5.3%). While for the secondary sector there are no notable differences, the shares of the tertiary sector differ significantly. Armenia's service sector accounts for only approximately half of the value added and employment (54.3% and 55.2%) of the total economy, while in the EU-28 countries the same sector contributes 73.9% of the total value added and 72% of the total people employed.

[2] The sum of all sectors adds to 90.6%

Figure 1: Employment by Sector (as a Percentage of Total Employment), 1991–2019[3]



Source: own table based on the World Bank (2021).

Figure 1 displays how the distribution of employment among the three sectors has changed from 1991 to 2019. It shows that the share of workers employed in the primary sector has decreased from over 40% to approximately 30%. While the relative number of employees in the secondary sector has remained relatively stable, the tertiary sector has gained importance. Growing from approximately 37 to 53% in 2019, this sector employed more than half of the working population in 2019.

In terms of competitiveness, Armenia's economy ranked 69th of 141 economies according to the Global Competitiveness Index (GCI) of the World Economic Forum (WEF) in 2019 (World Economic Forum, 2019, p. XIII). It thus ranks below its neighbours Azerbaijan (58) and Turkey (61) but above Georgia (74). The comparably weak ranking in the market size category (118th) is notable. This comes as no surprise because the GDP is not calculated on a per capita basis. Regarding the labour market category, Armenia ranked 32nd and thus in the top quarter of the investigated countries (World Economic Forum, 2019, pp. 62-65).

On the Global Innovation Index, Armenia ranks 61st of the 131 economies analysed (Cornell University, INSEAD, & WIPO, 2020, p. XXXIII). Especially in the human capital and research and infrastructure categories, Armenia's position is below average, with the country ranking 94th and 90th, respectively (Cornell University, INSEAD, & WIPO, 2020, p. 218).

1.2 The Labour Market

In the first part of this section, we describe the general situation of Armenia's labour market. In the second part, we focus on the youth labour market in particular.

[3] Differences to Table 2 in year 2019 occur due to different sources

1.2.1 Overview of the Armenian Labour Market

Armenia's constitution includes regulations prohibiting discrimination with respect to employment and occupation based on gender, ethnicity, religion, and more. However, mechanisms to act effectively against such discrimination are nonexistent. Therefore, discrimination in the labour market is expected to occur on a regular basis, even though exact statistics are lacking. Similarly, the government does not enforce the established laws regulating the workweek to 40 hours and providing for 20 days of mandatory paid leave on an annual basis as well as mandatory compensation of overtime. In addition, the U.S. Department of State argues that Armenian workers' rights are largely unprotected due to the lack of labour inspection regimes and independent trade unions (U.S. Department of State, 2020).

Furthermore, significant inequality between men and women exists in Armenia. A law requiring equal pay for equal work is not incorporated in the labour code, leading to a significant wage gap, which is expected to amount to 20 to 33% depending on the sector (World Bank, 2018; U.S. Department of State, 2020).

Since 1 January 2020, the minimum monthly wage in Armenia is AMD 68,000, which corresponds to approximately US$140. The implemented minimum wage is the same across all sectors and does not differ among different industries (Ministère de l'Économie, des Finances et de la Relance, 2020).

In terms of trade union density, Armenia ranks notably high at 19th out of 104 countries analysed by the International Labour Organization (ILO). With 32.2% of all earners being part of a trade union in 2015, Armenia has similar trade union participation levels as Italy and Luxembourg (International Labour Organization, 2020). However, most Armenian trade unions have yet to establish active discussions or collaborations with political parties. This leads to little influence on processes establishing policies and reforms. A lack of qualified leadership does not help to improve this situation and further leads to insufficient representation and protection of workers' rights (Nazaretian & Busch, 2017).

Table 3: Labour Force Participation Rate and Unemployment Rate by Age in 2018

	Labour Force Participation Rate		Unemployment Rate	
Age Group	Armenia	OECD Average	Armenia	OECD Average
Total (15–64 years)	64.6	72.2	17.5	5.4
Youth (15–24 years)	35.6	47.5	37.8	12.3
Adults (25–64 years)	73[4]	78.2	18.4[4]	4.7

Source: Own table based on the OECD (2020), the ILO (2021) and the World Bank (2021).

Armenia's labour force participation lies below the OECD average in all age categories as displayed in Table 3. Furthermore, the unemployment rate is significantly higher than in OECD countries. The level of unemployment among 15- to 24-year-olds (37.8%) is striking, which means that more than every third youth in Armenia is unemployed. Overall, Armenia has higher levels of unemployment compared to its neighbours (World Bank, 2021).

According to a World Bank report (2019, S. 21), the causes for the high level of unemployment are manifold. First, Armenia's economy fails to create enough jobs for its labour force. Although Armenia's economy has shifted away from low-productivity sectors such as agriculture towards a more service-driven economy, a modern and dynamic private sector is missing. The existence of such a sector

[4] Number corresponds to the age group 25-54

could lead to a higher demand for more highly educated workers due to innovation, diversification and competition. In combination with the aging population, the stagnating number of jobs (in the past, job destruction has even been experienced) could have detrimental effects in the future.

Another reason for the high unemployment rate is the mismatch between workers' skills and job requirements. Generally, unemployment in Armenia is seen as a structural problem where the unemployed often search for work for more than a year. In combination with the mentioned skill mismatch and the inability to find a suitable job may lead to a lack of perspectives about returning or entering the active labour force. This can discourage unemployed workers who then quit looking for jobs entirely. This may explain the lower participation rate of Armenia's labour force, because such individuals are not included in the labour force (World Bank, 2019).

Table 4: Labour Force Participation Rate and Unemployment Rate by Educational Attainment in 2019 (Persons Aged 25–64)

	Labour Force Participation Rate		Unemployment Rate	
Education Level	Armenia[5]	OECD Average	Armenia[5]	OECD Average
Less than upper secondary education	61.2	65.0	20.6	9.2
Upper secondary education	67.0	80.6	18.6	5.4
Tertiary education	76.8	89.0	17.3	3.8

Source: Own table based on the OECD (2020) and the ILO (2021).

Table 4 displays the labour force participation rate and the unemployment rate by education level for Armenia as well as the OECD average. Armenia's labour force participation follows a similar pattern to that of the OECD average. The participation rate increases with higher levels of education. While for the labour force with less than upper secondary education the participation rate is similar in Armenia and the OECD countries (61.2 and 65%, respectively), for upper secondary and tertiary education, the rates differ significantly. For the segment with upper secondary education, the difference amounts to 13.6% (67% in Armenia vs. 80.6% for the OECD Average). Concerning the labour force obtaining a tertiary education, the rates differ by 12.2% (76.8% in Armenia vs. 89% for the OECD Average). The unemployment rate situation is similar. The numbers negatively correlate with the level of education in both Armenia and the OECD countries. However, Armenia shows significantly higher unemployment rates in all three segments. Additionally, the OECD average unemployment rate for the population with a tertiary education is approximately a third of the rate for the segment obtaining less than an upper secondary education. In Armenia, this difference is significantly smaller.

The aforementioned lack of jobs and the skill mismatch may be one reason for the high unemployment rates across the different levels of education. Furthermore, again similar to the above, the high share of unemployed workers unable to find a job for more than a year may reduce the labour force participation rate.

[5] Numbers for Armenia consider the age group 25-54

1.2.2 The KOF Youth Labour Market Index

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare the youth labour market situation across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the widely used youth unemployment rate, does not suffice to describe the youth labour market situation adequately nor provide enough information for a comprehensive cross-country analysis. To increase the amount of information considered and to foster a multi-dimensional view, the KOF YLMI consider twelve indicators that are grouped into four dimensions (see the information box to the right).

Dimensions and the corresponding indicators of the KOF YLMI
Activity State - Unemployment Rate - Relaxed Unemployment Rate[6] - Neither in Employment nor in Education or Training rate (NEET rate)
Working Conditions - Temporary Worker RateTemporary worker rate - Involuntary Part-time Worker Rate - Atypical Working Hours Rate - In Work at Risk of Poverty Rate[7] - Vulnerable Employment Rate[8]
Education - Formal Education and Training Rate - Skills Mismatch Rate
Transition Smoothness - Relative Unemployment Ratio[9] - Long-term Unemployment Rate[10]
Source: Renold et al. (2014).

The first dimension is the **Activity State**. It contains three indicators, and captures to what extent the youth are active. Youth refers to all individuals aged 15-24. The indicators Unemployment Rate, Relaxed Unemployment Rate, and NEET Rate, The **Working Conditions** dimension consists of five indicators that capture the quality of employment. Those are the Temporary Worker Rate, the Involuntary Part-time Worker Rate, the Atypical Working Hours Rate, the In-work At-risk-of-Poverty Rate and the Vulnerable Employment Rate. **Education**, the third dimension, aims to capture the quantity and quality of education and training via two indicators: the Formal Education and Training Rate and Skills Mismatch Rate. Finally, the **Transition Smoothness** dimension describes the dynamics of the transition process between school and work. The indicators Relative Unemployment Ratio and Long-Term Unemployment Rate compose this dimension.

Before aggregating the indicators into a single index, each indicator value is rescaled into an indicator score that takes values between 1 and 7, where higher scores suggest more desirable outcomes. The data for the indicators are collected from different international institutions and cover up to 178 countries from 1991 onward. Unfortunately, data are not available for all countries in every year, so that one of the major limitations of the KOF YLMI is data availability. When data is lacking, a dimension can occasionally be based on a single indicator or must be omitted entirely when not a single indicator for that category has data available. A lack of indicators can make comparisons across countries or groups of countries problematic and sometimes even impossible.

[6] Is calculated as the number of unemployed and discouraged workers as a share of the entire labour force. Discouraged workers have given up the search for work (not actively seeking), although they have nor job and are currently available for work (also: “involuntary inactive”).

[7] Those who cannot make a decent living out their earnings. It is calculated as the number of youth at work but earning less than 60% of the median national income as a percentage of the total working population.

[8] Share of the employed population working on their own account or those working in their family business and thus contributing to the entire family income. Both are less likely to have formal work arrangements and are therefore less protected by labour laws and more exposed to economic risk.

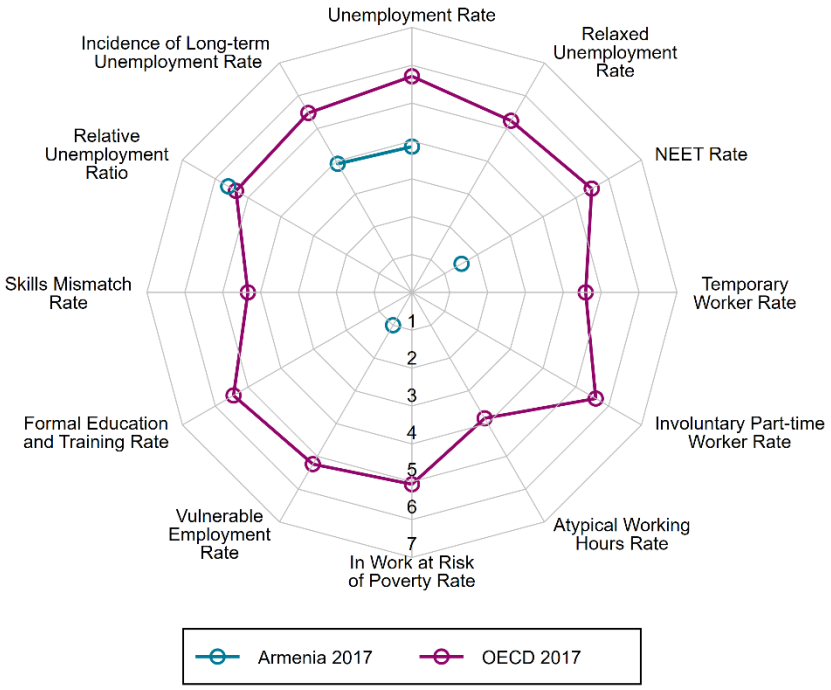
[9] Is defined as the youth unemployment rate (15-24 years) divided by the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be larger than one.

[10] Those unemployed for more than one year (52 weeks) as a share of the total number of unemployed (according to the ILO definition).

1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for Armenia

Figure 2 depicts the different dimensions of the KOF YLMI for Armenia and the OECD average for 2017. Due to a lack of data, only five dimensions of Armenia's youth labour market can be analysed.

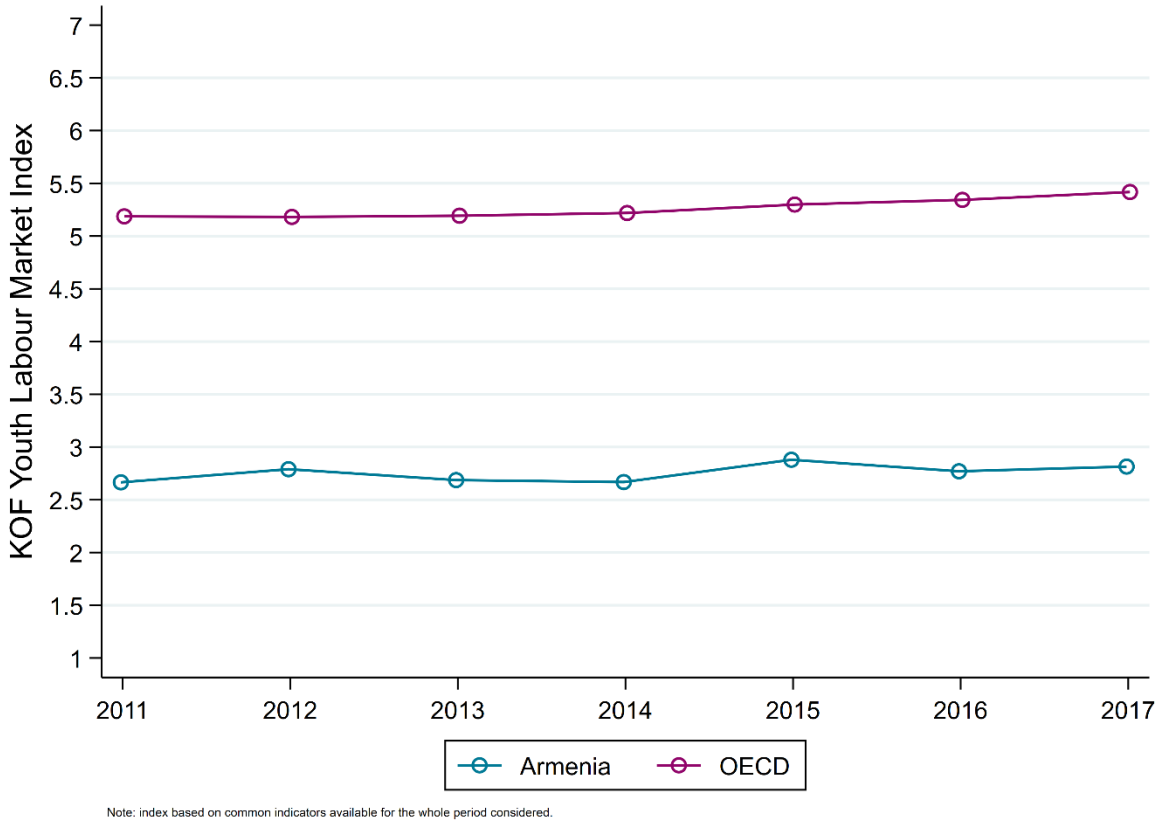
Figure 2: YLMI Scorecard: Armenia vs. the OECD Average in 2017



Source: Own figure based on KOF (2021).

Figure 2 shows that in terms of the relative unemployment ratio, Armenia performs slightly better than the OECD average (5.6 vs. 5.4). This is due to the fact that the relative difference between unemployment among Armenia's youth and over-25 populations is smaller than the same difference in the OECD average. Hence, even with high unemployment rates a good ranking is possible as long as the unemployment rate among youths and among the population over 25 years of age is similar. In the other four dimensions where data is available, Armenia's youth labour market is significantly below the OECD average. Of the four dimensions where Armenia's score lies below the OECD average, the difference in the incidence of long-term unemployment rate category (3.9 for Armenia vs. 5.5 for the OECD) is the smallest. A similar difference can be observed in the unemployment rate dimension (3.9 for Armenia vs. 5.7 for the OECD). Armenia's youth labour market performs especially poorly in the NEET rate and vulnerable employment rate categories (1.5 and 1.0, respectively) in comparison to the OECD average (5.5 and 5.2, respectively).

Figure 3: YLM-Index Armenia versus OECD, 2011–2017



Source: Own figure based on KOF (2021).

Figure 3 displays the YLMI over the period from 2011 to 2017 for Armenia as well as the OECD average. Due to the aforementioned lack of data in seven categories, the YLMI for both countries is only based on five dimensions and thus is not conclusive. The available data shows a clear gap between the level of the youth labour market in the OECD countries and Armenia since the latter scored significantly worse over the entire analysed period. Over the seven-year period, Armenia's YLMI remained relatively stable with no major improvements or deteriorations.

1.3 Armenia's Political System

Understanding the basics of a country's political system and getting to know the political goals with respect to its education system are crucial points for the understanding of the education system in a broader sense. Therefore, in Section 1.3.1 we start by presenting Armenia's political system in general. Then, in Section 1.3.2, we focus on the politics and goals of the education system.

1.3.1 Overview of the Armenian Political System

Following the dissolution of the Soviet Union, Armenia gained its independence in 1991. After four years of independence, a new constitution was established to replace the old constitution from the Soviet era. Armenia's form of government is a unitary multiparty republic (Britannica, 2020).

The legislative branch consists of a unicameral parliament—the National Assembly—with a total of 105 members. Members are elected directly by the voters and in turn appoint the president. The president is the official head of state and is thus part of the executive. The National Assembly also elects the prime minister, who is the head of the government. Besides the central government located in the capital city Yerevan, communities form the local level and thereby represent the only self-government

level in Armenia. In total, Armenia is divided into 915 communities (Britannica, 2020; European Commitee of the Regions, 2016).

On *The Economist*'s Democracy Index, Armenia ranks 86th out of 167 countries with a score of 5.54. This score implies a hybrid regime. Even though Armenia is positioned in the lower half of the index, it has significantly improved compared to previous years. The reason for this improvement is the elections held in 2018 following the Velvet Revolution in May 2018, which independent election observers judged to be fair and free. In this election, former president Serzh Sargsyan, who had held the position since 2008, was prevented from switching to the post of prime minister and thus remaining in power. The improvement in the Democracy Index also reflects the people's increased trust in the political system (The Economist, 2019).

Various reports highlight Armenia's longstanding problems with corruption and the lack of transparency concerning government officials' financial ties. Following the uprisings of the Armenian people in May 2018, the government declared that it would investigate a number of alleged corruption cases with former high-ranking politicians and their families. Furthermore, anticorruption policy reforms have been established. The U.S. Department of State as well as the non-governmental organisation (NGO) Transparency International state that the prevailing intransparency still presents a major impediment to ending corruption. On the Corruption Perception Index, Armenia ranks 77th and thus in the upper half of the 180 countries investigated (Transparency International, 2020; U.S. Department of State, 2020, S. 26).

The World Bank's worldwide governance indicators ranked Armenia in the lower half of all analysed countries for most of the investigated categories in 2019. Armenia only ranked in the top 40% in the regulatory quality category. In comparison, the OECD average ranks in the top 20%. Compared to the previous years (2009 and 2014), Armenia has significantly improved in the voice and accountability, rule of law and control of corruption categories. During the same period, Armenia's position deteriorated notably in terms of the absence of violence/terrorism (World Bank, 2019).

1.3.2 Politics and Goals of the Education System

The Ministry of Education, Science, Culture and Sport (MoESCS) bears the responsibility for the education system in Armenia (Government of the Republic of Arrmenia, 2021). It thereby develops and monitors the education programmes in place. While the approved educational standards and programme regulations apply to all educational institutions in Armenia, the management of the various institutions varies. Some institutions are under direct management of the ministry, while regional authorities manage others. Additionally, the ministry's responsibilities include the approval of learning plans and teaching resources. Within the MoESCS, the National Institute of Education (NIE) is concerned with the development of syllabi and subject standards as well as the formal training of teachers (European Union, 2017).

The MoESCS faces major challenges in modernising the education system. In the past decades, several reforms have attempted to address the problems, but these attempts have mostly ended in uncoordinated efforts, such as the aforementioned inconsistent authorities over educational institutions. In particular, the relatively low budget of 3% of the GDP restrains possibilities. Due to this shortage of financial means, private and donor-funded initiatives play a crucial role in the process of modernising Armenia's education system. To ensure coherence between the state-funded and private initiatives, the Centre of Strategic Initiatives was established in 2016. It is intended to support the Armenian government with the implementation of effective reforms with consistent aims and impact on non-state initiatives. Another problem, which is a direct consequence of the lack of financial means in the educational sector, is a shortage of teachers. One reason for this shortcoming is the average salaries for teachers, which are approximately half of the country's average income (European Union, 2017).

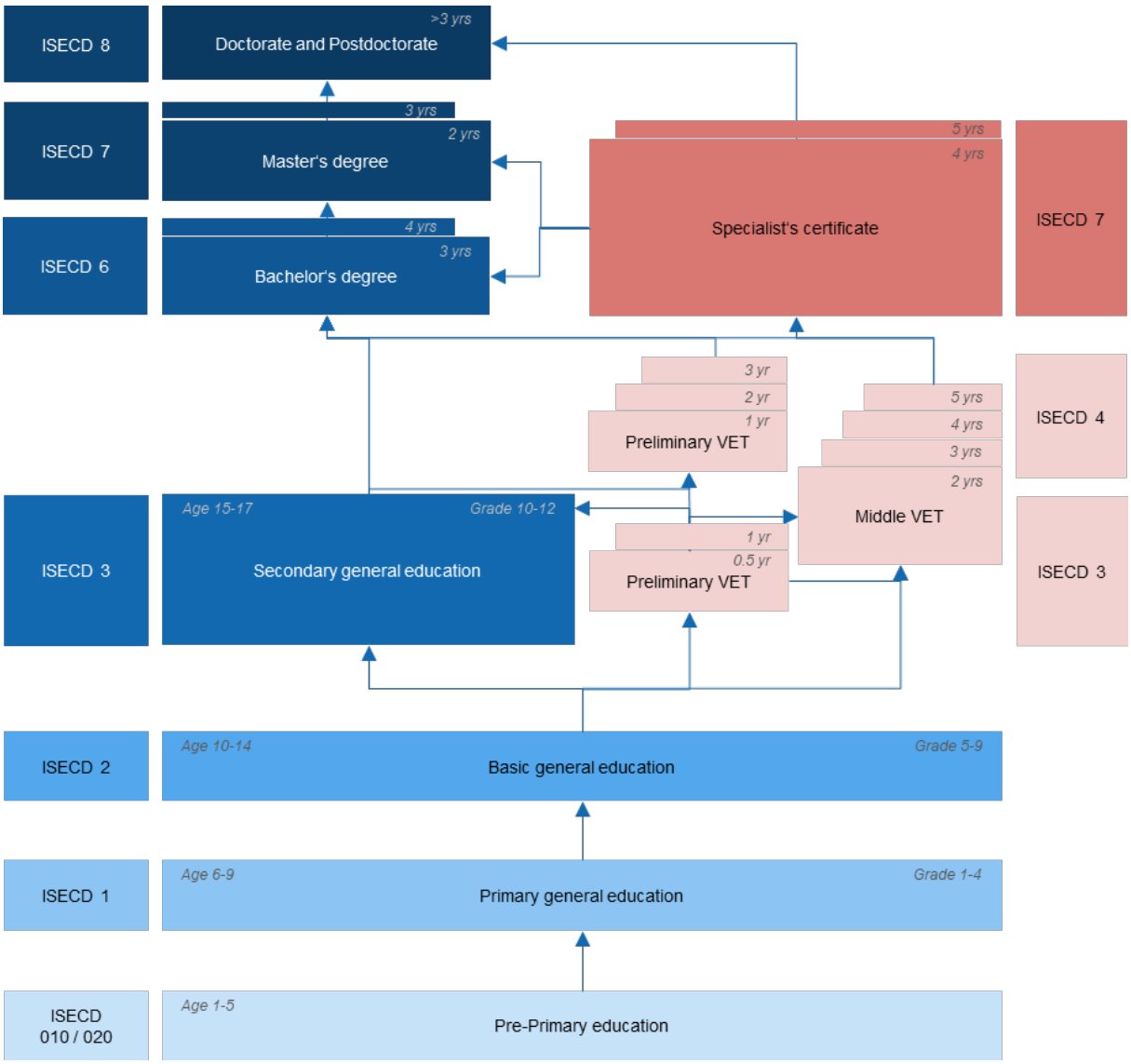
2. Formal System of Education

The Armenian law on education from 1999 provides the legal framework for the formal system of education. It mandates a 12-year secondary education that is free of charge at state institutions (Ministry of Justice of the Republic of Armenia, 2009). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Data on Education report (2011), Armenia's education system is organised into three levels:

- pre-school education
- general education, consisting of
    - primary general education (grades 1–4)
    - basic general education (grades 5–9)
    - secondary general education (grades 10–12)
- higher education

Armenia is part of the Bologna system because they joined the process in 2005. Additionally, Armenia participates in the European Higher Education Area (EHEA). Since joining the Bologna process, reforms and new legislation drafts have been elaborated and discussed in the parliament (Robertson & Melkumyan, 2020). The following chapter outlines the currently installed formal education system in more detail.

Figure 4: The Armenian Education System



Source: Own figure based on UNESCO (2011; 2012).

Table 5: Net Enrolment Ratio (NER) and Gross Enrolment Rate (GER), 2019

Education Level	ISCED 2011	Net Enrolment Rate	Gross Enrolment Rate
Early childhood education development programmes	010	N/A	N/A
Pre-primary education	020	36.6	39.3
Primary education	1	88.9	91.9
Secondary education	2–3	84.6	86.5
Lower secondary education	2	90.0[11]	89.8
Upper secondary education	3	65.0[12]	80.3
Percentage enrolled in vocational secondary education	2–3	N/A	N/A
Compulsory education age group	1–3	N/A	N/A
Postsecondary non-tertiary education	4	N/A	N/A
Tertiary education	5–8	51.5	N/A
Short-cycle tertiary education	5	N/A	N/A
Bachelor or equivalent level	6	N/A	N/A
Master or equivalent level	7	N/A	N/A
Doctoral or equivalent level	8	N/A	N/A

Source: own table based on UNESCO (2020), UNICEF (2019) and Trading Economics (2020).

Table 5 shows the gross enrolment ratio (GER)[12] and net enrolment ratio (NER)[13] by education level for 2019. The NER quantifies the total number of students in the theoretical age group for a given education level enrolled at that level expressed as a percentage of the total population of that age group. The GER quantifies the number of students enrolled at a given education level—irrespective of their age—as a percentage of the official school-age population corresponding to the same level of education. For example, for the primary education level, the NER indicates how many students of the typical primary school age are actually enrolled in primary school, while the GER sets the actual number of students in primary education—irrespective of their age—in relation to those who are of the official age to attend primary education.[14]

At all levels of education, females have a higher GER compared to their male peers. At the primary level, the differences are comparably small, with 92.1% for females and 91.6% for males. In secondary education, the difference is 4.5% (84.4% for males vs. 88.9% females). However, in tertiary education in 2019, the GER for females was 59.4% compared to 44.4% for males. Comparing these num-

[11] Value corresponds to the year 2018

[12] The UNESCO Institute for Statistics (UIS) **Invalid source specified.** defines the gross enrolment ratio as the "number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education."

[13] The UIS **Invalid source specified.** defines the net enrolment ratio as the "Total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group."

[14] A gross enrollment rate of 100 corresponds to a situation where each child in a given country is enrolled in the corresponding education level. A value above 100 could occur due to students who are older than the typical enrolment age for primary education (e.g. have to repeat grade, adult learners). A value below 100 implies that not everyone who is in the typical age for primary education is actually enrolled.

bers to the OECD average indicates that the higher GER for females is not specific to Armenia (OECD average: GER for males—68.4%, GER for females—80.5%). Equally, the number of out-of-school male children and adolescents is higher than that of their female peers (UNESCO, 2020).

2.1 Pre-Primary Education

Pre-primary education in Armenia provides different non-compulsory options for children under the age of six. Institutions include the following:

- Nurseries (for children aged 0–3)
- Kindergartens (for children aged 3–6)
- School-based kindergartens (for children aged 5–6)

These institutions may differ based on their type of ownership. Although the majority of pre-primary education institutions are state owned, some privately owned nurseries and kindergartens exist (Milovanovitch & Bloem, 2019). The joint objectives for all pre-primary education are stated in the National Curriculum for General Education and consist of the following:

- Developing the children physically, morally and intellectually
- Developing communication in Armenian and foreign languages
- Supporting the acquisition of elementary skills in mathematics and ethical norms
- Teaching elementary knowledge about the natural environment, ecology, the history of the nation and national culture
- Supporting the children's preparation for school entry (UNESCO, 2011)

Nurseries are thereby predominantly intended to look after children up to three years old. Thus, they mainly serve to support working parents and provide a foundation for children's physical and intellectual development. As of 2017, 113 nurseries existed in Armenia, most of which are state owned. Only five are privately owned. Of the state-owned institutions, most are managed on community level. The enrolment rate for children aged up to 3 years was only 6% in 2016 (Milovanovitch & Bloem, 2019).

Compared to nurseries, the objectives of kindergarten go further. Besides fostering language skills, kindergarten also begins to develop children's basic skills in logical and moral thinking. At 38.3%, the 2015 enrolment rates for the Armenian kindergarten level were significantly higher than the enrolment rates of nurseries. This is also visible in the number of institutions in existence throughout the country. In total, there are 575 kindergartens, of which 538 are state or community owned and 37 are private. However, comparing the enrolment rate to the OECD average of 86.7% (also 2015) reveals a notable difference. One explanation for the low enrolment rates in Armenia is that besides the licensed (private and public) nurseries and kindergartens, other non-licensed institutions exist. These mostly privately owned settings have gained significant popularity since state-owned institutions are often overfilled and licensed private institutions are expensive. Due to the lack of licensing, the children enrolled in such institutions are not counted in the pre-primary education statistics (Milovanovitch & Bloem, 2019; UNESCO, 2011).

Finally, school-based kindergarten is intended to prepare children for formal schooling. Thus, the focus is on developing basic skills in different school subjects such as mathematics and languages. Enrolment rates for such institutions have not been disclosed. However, the low number of such school-based kindergartens in Armenia (33 in total) suggests a small share of the respective age group participating in such programmes (Milovanovitch & Bloem, 2019).

2.2 Primary and Lower Secondary Education

Primary and lower secondary education is divided into two levels in the Armenian education system. Primary education is called "primary general education" and includes the first four grades of mandato-

ry schooling. The subsequent five grades constitute the lower secondary education level and are called “basic general education” (UNESCO, 2011).

Children generally enter primary education when they are 6 years old. The GER for this stage is 91.9%. At state- or community-owned institutions, primary education is free of charge. The majority of pupils attend public schools. Only a small fraction of students are enrolled in private primary schools. This is also reflected in the low number of privately owned primary schools (41; UNESCO, 2011). Primary education follows the curriculum provided by the MoESCS. Its objectives are targeted to develop children’s “literacy and language skills, the basis of logical thinking, the provision of preliminary learning and work skills, and familiarity with national values” (Schmidt-Braul & von Kopp, 2007, S. 37). Table 6 displays the subjects taught in primary school in accordance with the national curriculum. After the completion of the fourth grade, two mandatory tests are performed to assess students’ academic level in mathematics as well as reading and writing in Armenian (Schmidt-Braul & von Kopp, 2007).

After finishing the four grades of primary education, students begin their basic general education (lower secondary level). This stage comprises five grades, and children generally enter at the age of 10 and graduate at age 14 or 15. The NER for the lower secondary level was 90% in 2018 (Trading Economics, 2020). As is the case for the primary level, the basic general education provides a universal education with no specialisation. In most schools, Russian is taught as the first foreign language, but a minority also cover English prior to introducing Russian. Table 6 shows the subjects taught at the lower secondary level. Admission to the lower secondary level can vary from school to school due to the deregulation of the education system following the Soviet era. Thus, certain schools require a minimum grade average while others have no minimum admission standards other than successful completion of primary general education (Schmidt-Braul & von Kopp, 2007).

Table 6: Lessons Taught per Subject in a School Week at the Primary and Lower Secondary Levels

Subject	Primary General Education				Basic General Education				
	1	2	3	4	5	6	7	8	9
National components									
Armenian language and literature	7	8	8	8	7	6	5	5	5
Foreign languages	-	2	4	4	5	5	5	5	5
Mathematics	4	4	4	4	5	5	5	5	5
Informatics and Information and Communication Technologies (ICT)	-	-	-	-	-	1	1	1	1
Me and the surrounding world	-	1	1	2	-	-	-	-	-
Natural sciences	-	-	-	-	2	3			
Physics, chemistry and biology	-	-	-	-	-	-	5	6	6
Nationhood	-	-	-	-	1	-	-	-	-
History of the Armenian church	-	-	-	-	1	-	-	-	-
Social sciences	-	-	-	-	-	3	4	6	6
Arts and technology	6	4	3	3	-	-	-	-	-
Arts	-	-	-	-	2	1	1	-	-
Technology	-	-	-	-	1	1	2	-	-
Physical education and safe lifestyle	3	2	2	2	2	2	2	2	2
Initial military training	-	-	-	-	-	-	-	-	1
School components									
Additional subjects	-	1	2	2	2	3	3	3	3
Total lessons per week									
Total	20	22	24	26	28	30	33	33	34

Source: own table based on UNESCO (2011).

2.3 Upper Secondary Education

Having graduated with the certificate of basic general education, students are given the choice between starting vocational training or continuing general education. On average, students are aged 15 when entering the upper secondary education level. Since Armenia's education law requires 12 years of mandatory schooling, youths are obliged to pass three years of upper secondary education (UNESCO, 2011).

When choosing to continue their education in general education, students are offered the choice between "regular" and "specialised" high schools. While regular high schools set no particular focus on certain subjects, specialised institutions concentrate on specific topics (e.g., mathematics and physics, humanities or chemistry and biology). Table 7 and Table 8 display the curriculum taught at the two different streams of high schools. The only admission criteria prescribed by the government is the certificate of basic general education. Additionally, schools can incorporate further admission criteria

(e.g., a minimum grade). After successful completion of the three high school grades, students are awarded the certificate of general secondary education. This is independent of whether the students attend a regular or specialised high school (UNESCO, 2011).

Table 7: Lessons Taught per Subject in a Regular High School

Subjects	11	12	13
National components			
Armenian language and literature	5	5	5
Foreign languages	5	5	5
Algebra and elements of mathematical analysis	2	2	2
Geometry	2	2	2
Informatics and ICT	1	1	1
Natural sciences	7	7	7
Social sciences	5	5	5
Physical education and safe lifestyle	2	2	2
Initial military education	1	1	1
School components			
Additional subjects	4	4	3
Total lessons per week			
Total	34	34	34

Source: own table based on UNESCO (2011).

Table 8: Lessons Taught per Subject in a Specialised High School

Subjects	11	12	13
National components			
Armenian language and literature	4	4	4
Foreign languages	4	4	4
Mathematics	3	3	3
Natural sciences	3	3	3
Social sciences	4	4	4
Physical education and safe lifestyle	2	2	2
Initial military education	1	1	1
National components (specialised)			
Subjects of the specialised stream	11	11	11
School component			
Additional subjects	2	2	2
Total lessons per week			
Total	34	34	34

Source: own table based on UNESCO (2011).

Instead of going to high school, Armenian youths have the choice to start vocational education after basic general education. At approximately 10% of all students enrolled in the upper secondary level, the percentage of students who choose vocational education is significantly lower than that of those who enrol in general education (State Statistical Committee of the Republic of Armenia, 2018). Armenia's system of initial vocational education and training (IVET) consists of two levels: preliminary and middle-level VET.

Both levels can be pursued after either basic general education or secondary general education. Preliminary VET is thereby considered a craftsmanship programme. The programme takes six months to one year to complete if pursued after graduating basic general education and leads to a certificate of master training qualification. If pursued based on secondary general education, preliminary VET takes one to three years, and graduates receive the diploma of craftsmanship education. Middle VET programmes take two to five years to complete depending on whether they are based on basic or secondary general education and depending on the profession. Graduates are awarded the diploma of middle vocational education. Preliminary VET programmes are taught at vocational craftsmanship schools or other professional education institutions. Middle VET, on the other hand, is offered at universities, specialised colleges and special middle VET educational institutions (Robertson & Melkumyan, 2020; European Training Foundation, 2017; European Training Foundation, 2018; European Training Foundation, 2003; European Training Foundation, 2019).

2.4 Postsecondary and Higher Education

Postsecondary and higher education exceeds the 12-year mandatory education and is thus not part of the obligatory education in Armenia. Postsecondary and higher education is regulated by Armenian law on higher and postgraduate professional education (Ministry of Justice of the Republic of Armenia, 2004).

After secondary general education, students have the opportunity to proceed in general education with a bachelor's degree, a master's degree and an *aspirantura* (PhD). To enter higher education, students undergo competitive entrance examinations (Schmidt-Braul & von Kopp, 2007). The law on higher education regulates the duration of all three levels. A bachelor's degree is equal to 240 European Credit Transfer System (ECTS) points, which amounts to four years of full-time study. There are exceptions to this for bachelor's degrees in police and military professions, which usually take three years of full-time study. A master's degree consists of between 60 ECTS and 120 ECTS and therefore takes a minimum of one to two years to complete, while a PhD is regulated to a minimum duration of three years (Ministry of Justice of the Republic of Armenia, 2004). In 2018, higher education was offered at a total of 61 institutions in various Armenian cities. In the same year, a total of 78,747 students were registered at higher education institutions (World Bank, 2019). Higher education is provided in three types of institutions: public universities, private universities and cross-border institutions. At public institutions, education is free of charge, as is the case for select private and cross-border universities (Ministry of Justice of the Republic of Armenia, 2004). Cross-boarder institutions are universities or colleges that are regulated by the laws of two or more countries. At such institutions, students have the opportunity to pursue an international (double) degree in cooperation with European or American partner institutions. Besides the regulating element, financing is also covered by the contributing states. In Armenia, four such cross-border educational providers exist: the American University of Armenia, the Russian-Armenian University, the French University in Armenia and the European Regional Educational Academy of Armenia (Gharibyan, 2017). Independent of the type of institution, students have the opportunity to apply for a variety of state-funded and privately founded scholarships. These aids grant different levels of financial support (e.g., for tuition, materials, housing, etc.; UNESCO, 2011).

The Armenian higher education system provides a second path besides bachelor and master's studies. After secondary general education, students have the chance to obtain a specialist degree equal to a master's degree. This can be achieved through the long first degree tertiary education, which takes a minimum of four to five years depending on the field of study (Armenqa, 2017). Specialist diploma studies, in contrast to the ordinary bachelor and master's degrees, provide students with practical knowledge and experiences and are thus part of the professional education and training (PET) system. At the end of the programmes, students have to pass final assessments and write a thesis (Study Portals, 2021).

2.5 Continuing Education (Adult Education)

Continuing education in Armenia is officially managed and coordinated by the MoESCS department for youth policy and supplementary and continuing education. The department's main objective concerning adult education is the provision of guidelines and regulations to foster the adjustment of human capital to the needs of the labour market (Government of the Republic of Armenia, 2016). Despite the integration of adult education into the official education system, Armenia lacks a coherent and coordinated strategy for continuing education (Europe XXI Foundation, 2013).

On the state level, several state-owned universities and colleges have introduced programmes for adults (Irene Gyulnazarian Educational Fund for Armenia, 2020). They often focus on languages or technological skills, sometimes specific to a profession or industry. Such programmes occur in various forms. Some are structured in evening classes aimed at employed workers, while others are similar to classic school settings with courses throughout the day. In addition, the durations vary significantly among the different options. However, they usually take between one and six months. Successful completion is awarded with a certificate. Even though such courses are taught at the mentioned state-owned institutions, Armenia relies heavily on foreign investment to finance continuing education (e.g., from Gesellschaft für Internationale Zusammenarbeit [GIZ], the European Union, USAID, etc.; Armenqa, 2017; Soghomonyan, 2019).

Besides programmes at state-level institutions, the vast majority of these institutions are on communal and private bases. NGOs in particular play a crucial role in the adult education sector. Such institutions mostly rely on private donations to be able to finance courses (Soghomonyan, 2019). Most of these courses are inexpensive for the participants, but not usually free of charge. Additionally, certain international companies have established internal education programmes (Bandau & Ganjalyan, 2017).

2.6 Teacher Education

Armenian teacher education is subordinated under the NIE. The minimal education for teachers at the primary general and basic general levels is a bachelor's degree and master's degree, respectively, from a pedagogical college or university. Teacher education has been liberalised in Armenia, which means that private institutions have the right to educate teaching personnel. Despite this effort, most aspiring teachers attend NIE institutions. These state-owned facilities are structured into NIE branches in various communities throughout the country. Teaching at high schools officially requires a university degree in the respective field. However, due to the prevailing shortage of trained teachers in Armenia, 32% of all teaching staff do not obtain a suitable degree (Open Society Foundation, 2013).

After completion of the formal education, the law on general education requires teacher to undergo attestation every five years (Ministry of Justice of the Republic of Armenia, 2009). This means attesting 20% of the entire teacher population every year. Due to insufficient resources, the system fails to fulfil the set objectives (Open Society Foundation, 2013).

3. The System of Vocational and Professional Education and Training

This section of the Factbook describes the VET system at the upper secondary level and the PET at the tertiary level in more detail. Thereby, the term vocational and professional education and training (VPET) refers to both, the VET and the PET system.

3.1 Vocational Education and Training (VET; Upper Secondary Education Level)

The Armenian VET system consists of two main pathways:

- Preliminary-level VET
- Middle level VET

The preliminary VET programme can be pursued after graduating either basic or secondary general education. It thus varies depending on whether preliminary VET is part of the compulsory 12-year schooling. On the basis of basic general education, the programme takes between six months and one year to complete, and graduates are awarded the certificate of master training qualification. In the ISCED classification, preliminary VET on the basis of basic general education constitutes ISCED 3, while on the basis of secondary general education, ISCED 4 is more suitable. Preliminary VET programmes are offered for a wide range of fields (e.g., gastronomy, Information Technology (IT), construction, the service sector, etc.) and a total of 112 professions. The costs for the preliminary level are only partly covered by the state; thus, the students are charged tuition. The main objective of the preliminary VET programme is to provide students with workers' qualifications in a selected field. On the preliminary VET level, the focus is on conveying industry- or profession-oriented skills and knowledge. Besides the theoretical basis, the programmes are intended to provide students with practical insights and application of theory. However, only a few programs are combined with mandatory internships or practical work experiences (European Training Foundation, 2019). In 2017, preliminary education could be pursued in 44 schools throughout Armenia (State Statistical Committee of the Republic of Armenia, 2018). As the low number of institutions already indicates, only approximately 5% of all students on the secondary level are enrolled in preliminary VET. With successful graduation from preliminary-level VET, students also obtain a secondary general diploma. Graduates therefore have the possibility to continue their education with a university degree or a specialist diploma (European Training Foundation, 2010; European Training Foundation, 2020; European Training Foundation, 2019).

Similar to the preliminary level, middle VET can be pursued on the basis of basic and secondary general education. Depending on the basis and the profession, middle VET takes between two and five years to complete. Thus, it again varies whether (parts of) middle VET are part of the compulsory education. Like preliminary VET programmes, middle VET programmes on the basis of basic general education match ISCED 3 and ISCED 4. The financing of the programmes is mostly covered by enrolment fees. However, to boost VET, the Armenian government provides 25% of all middle VET seats as part of special scholarships. These enable students to pursue their degree free of charge. Middle VET's main objective is to provide students with skills to supervise staff and manage production and service processes. Hence, it is targeted at educating management personnel. Similar to the preliminary level, the focus is on courses providing theoretical insights. These programmes can be pursued

in a variety of professional fields in 112 professions similar to the preliminary VET level. For example, programmes in accounting, veterinary, technical and agricultural fields are offered (European Training Foundation, 2019). The successful fulfilment of middle VET is awarded with a diploma in middle VET with a specialist qualification level. In terms of popularity, both the number of institutions and the percentage of secondary level students show the preference for this over the preliminary level in the VET system. In total, 93 institutions provided middle level VET in 2017. In the same year, 21% of all students enrolled in the secondary level were enrolled at such institutions (European Training Foundation, 2010; European Training Foundation, 2020).

3.2 Professional Education and Training (PET; Post-Secondary Level)

Based on secondary general education, a specialist diploma can be pursued. Such certified specialist degrees are an alternative to the classic academic bachelor and master's degrees. In total, such qualification degrees of a certified specialist take at least five years. An exception exists for art and physical education professions, which are regulated to a minimum of four years. The successful graduation grants a degree in higher education (Ministry of Justice of the Republic of Armenia, 2004). This degree is awarded independent of the profession and institution in which it is pursued. However, the opportunities the degree grants for further educational possibilities may differ depending on the institution and program. Thereby, certain specialist degrees can serve as prerequisites for a master's degree at university, as is the case for diplomas in legal studies (Armenian Constitutional Court, 2014). Graduates from other specialist diploma programmes have the possibility to proceed directly with a PhD (Ministry of Education and Science, 2005). Courses for specialist diplomas are taught at specialised colleges or universities. In contrast to the theoretical focus in university degrees, specialised higher education provides theoretical education with practical applications. Therefore, its orientation is more towards practical experiences. Specialist programmes can be pursued in a wide variety of fields (e.g., finance, data sciences, engineering, law, hospitality and gastronomy and healthcare; Aslanyan, 2005).

3.3 Regulatory and Institutional Framework of the VPET System

3.3.1 Central Elements of VPET Legislation

Armenian VET and PET have yet to be regulated by a centralised legislative act or document. Thus, the Armenian VPET system is indirectly based on policies and principles from a wide variety of decrees, concepts and laws. Thereby, the 2005 Law on Preliminary Vocational (Craftsmanship) and Middle Vocational Education defines the state policies in the Armenian VET system (UNESCO, 2012). Meanwhile, the Law on Higher and Postgraduate Professional Education provides the basis for the PET system (Ministry of Justice of the Republic of Armenia, 2004; SPHERE, 2018). Additionally, the 1999 Law on Education provides standards and guiding principles for the Armenian VPET system (European Training Foundation, 2020).

3.3.2 Key Actors

a) Vocational Education and Training

Government

The Armenian VET system is controlled and managed by different ministries. However, the main coordinating role is allocated to the MoESCS. This means that the competence for the development and monitoring of curricula and learning outcomes is assigned to the MoESCS. Within the MoESCS, the Armenian government has established the National Center for VET Development whose mission is to

identify weaknesses in the existing system and propose and implement adjustments. Additionally, the Ministry of Economic Development and Investments (MoEDI) plays a crucial role, especially in the improvement and further expansion of the VET system. Finally, the Ministry of Labor and Social Issues (MoLSI) and the MoESCS are jointly responsible for the development and implementation of a professional guidance system within the VET system (Robertson & Melkumyan, 2020; UNESCO, 2011).

Representation and Advisory Bodies

According to a report from the European Training Foundation (ETF; 2008), no social partners have institutionalised permanent representation in the VET system. Although social partners such as employer associations or trade unions are included in the VET system's development on a voluntary basis to assess the labour market's needs, such cooperation has been rare in the past (European Training Foundation, 2008).

Education and Training Providers

Preliminary VET is provided by specialised institutions called craftsmanship schools, which are mostly state owned. Some of them have established cooperation with companies in the respective sector to cover the practical application of the conveyed knowledge and skills (e.g., in the form of internships or other forms). However, such cooperation with practice partners is comparably rare. Middle VET, on the other hand, is provided in colleges that are mostly state owned (UNESCO, 2011).

b) Professional Education and Training

Government

The MoESCS is the governmental body responsible for the development, implementation and maintenance of the Armenian PET system. Similar to the VET system, other ministries such as the MoEDI or the MoLSI play a subordinate role by contributing to the development and expansion of the installed system (UNESCO, 2011).

Representation and Advisory Bodies

Compared to most VET institutions, the Armenian PET system is characterised by a large share of privately owned institutions. In such private institutions, stakeholders such as employer associations are included in the management or a steering committee more frequently than in state-owned counterparts. Thus, sectoral associations representing the employer's interests and needs hold especially influential positions within the PET system (European Training Foundation, 2008).

Education and Training Providers

As mentioned above, specialist diploma programs are provided at specialised colleges. These institutions are mostly privately owned. Comparable state-owned institutions exist, but in much lower numbers. Additionally, some state-owned universities provide PET programs leading to a specialist diploma (European Training Foundation, 2008; UNESCO, 2011).

3.4 Educational Finance of the VPET System

3.4.1 Educational finance of the VET system

The VET system is financed by the government as well as students through tuition fees. On the preliminary level, the government covers between 50 and 60% of the costs for students. The students

therefore cover the rest. For middle VET, the government covers approximately a third of the costs (European Training Foundation, 2008). In 2018, the share of the education budget intended for the VET system was 15.3%. However, only one year later in 2019, the VET budget only amounted to 4.3% of the state education budget. This was due to the increase of the total education budget from 9.4% of the total state budget to 17.3%. The majority of the additional financial means has thus been used for other educational pathways (European Training Foundation, 2020).

Since students are only enrolled at craftsmanship schools or colleges and not employed by a company, the students do not receive wages (European Training Foundation, 2020).

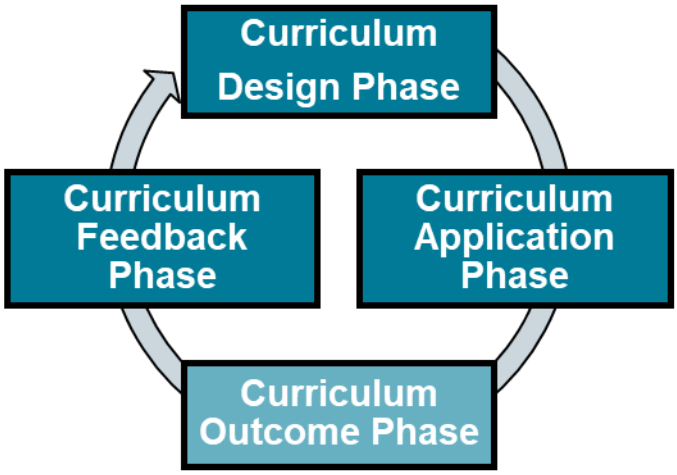
3.4.2 Educational finance of the PET system

Since the specialist diploma programmes are pursued at either universities or higher education institutions, the funding is similar to that of general education institutions. Due to the low budget for higher education, specialised diploma programs are primarily funded by tuition fees (Antonian, 2015). Accurate numbers on how the funding for higher education is split between university degrees and specialist diplomas are not available.

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET system because it defines the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process with curriculum design, curriculum application and curriculum feedback phases. This theoretical concept is called the curriculum value chain and is depicted in Figure 5 (for more details, see Renold et al., 2015; Rageth & Renold, 2019).

Figure 5: Curriculum Value Chain



Source: Renold et al. (2015) and Rageth & Renold (2019).

In the curriculum design phase, the relevant actors decide upon VET curriculum content and qualification standards. Therefore, the discussion in Section 3.5.1 focuses on the degree and the amount of stakeholder participation concerning curriculum design in Armenia. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ substantially across countries, especially with respect to the prevalence of workplace learning, Section 3.5.2 focuses on those learning environments. Specifically, it addresses where learning takes place and whether the curriculum dictates both school and workplace learning or only one of the two. Finally, curriculum outcomes can be collected and analysed in the curriculum feedback phase. Section 3.5.3

focuses on the curriculum feedback phase. This evaluation process is important because it may render a more refined curriculum design than was possible in the first place.

3.5.1 Curriculum Design Phase

The design phase is crucial for the whole curriculum process. To ensure that the skills taught in the VPET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning content of the curricula.

In the Armenian VET system, the education institutions are responsible to develop their curricula according to the state educational standards. The MoESCS is the governmental institution responsible for the development of these standards. Within the MoESCS, the Armenian government has established the National Centre for VET Development, which is commissioned with the development of standards for teacher training and curricula development. Thereby, the state educational standards serve as a guideline for the curriculum development. For professions for which no such standards exist, the MoESCS must accept changes to the curriculum before they are introduced. Following an ETF report, employers that are partners of VET education institutions are generally included in the definition of key requirements of VET graduates (European Training Foundation, 2019). In the curriculum design phase social partners are not included. However, such inclusion would be possible since no regulation exists concerning the inclusion of other stakeholders (European Training Foundation, 2008).

3.5.2 Curriculum Application Phase

The way in which a curriculum is implemented, especially with respect to learning environments, is important to achieve the intended learning outcome.

The government supervises the curriculum application within the education institutions through the National Centre for Professional Education Quality Assurance. Thereby, the achievement of the aforementioned key requirements graduates should have obtained through the VET programmes are analysed (European Training Foundation, 2019).

3.5.3 Curriculum Feedback Phase

The curriculum feedback phase deals with the questions of whether and how educational outcomes are analysed. Based on this, the curriculum could be reworked and improved.

The Armenian VPET system lacks an effective curriculum feedback phase. There are no structured processes in place that systematically monitor and evaluate the implemented curricula. This is one of the reasons for the aforementioned skills mismatch between the competences of VPET graduates and the needs of the labour market (European Training Foundation, 2019).

3.6 Supplying Personnel for the VPET System (Teacher Education)

In the Armenian VET system, the teaching staff consists of lecturers and masters of practical training. While lecturers are responsible for the theoretical components within the programmes, the masters of practical training provide courses with practical application of theoretical knowledge. Thereby, lecturers are required to hold at least a specialist diploma. Alternatively, a master's degree in a related field is acceptable. For masters of practical training—the practical components of VET—a middle or at times a preliminary VET diploma suffices. These requirements are regulated in the Law on Preliminary Vocational (Craftsmanship) and Middle Vocational Education. However, due to the lack of suitable teaching staff with the required qualifications, VET institutions often employ teachers with lower quali-

fications. The recruitment and appointment of teaching staff is the responsibility of each institution. Thus, various non-standardised procedures are applied in the different institutions. Out of the approximately 5,800 VET teachers, about 75% are women (European Training Foundation, 2019).

In the PET system, the regulator requires teachers to have obtained a minimum of a higher education degree from a university. For certain programmes and positions, even a PhD may be needed (European Training Foundation, 2019).

4. Major Reforms in the Past and Challenges for the Future

4.1 Major Reforms

Armenia's entire education system has undergone a number of reforms since its independence from the Soviet Union. The reforms can be structured in two phases: First, reforms drafted between 1997 and 2000 mainly focused on structural topics such as decentralisation and the general management of the system and the different institutions. Since 2003, reforms increasingly aimed at the content of the education system (Ministry of Education and Science of the Republic of Armenia, 2015).

Similar to the whole education system, the VET system has seen various reforms aimed at improving its quality and efficiency. Thereby, the vast majority of reform programmes at least partly intended to reduce the gap between the labour market's needs and the VET graduates' qualifications and skills. Most current and recent reforms are further intended to implement the Armenian Development Strategy, which set the goals for the education system until 2025. The main financial donor for reform of the VET system is the EU (European Training Foundation, 2018).

In 2015, the EU granted a total of EUR 15.2 Million to support the VET reform programme "Better Qualifications for Better Jobs". The programme was intended to improve the efficiency of the overall labour market as well as VET graduates' employability. The focus was put on VET students from agricultural institutions as a pilot before a later intended system-wide rollout. On the one hand, new mechanisms were introduced to improve the matching process between employers and workers. On the other hand, the programme's intention was to enhance the agricultural skills of agricultural VET students. This second component was implemented through new apprenticeship programmes. Students should therefore gain skills by practically applying the theoretical insights provided in the courses. Furthermore, the increased work-based component improves the students' employability due to the more efficient adaption to new technologies and processes. Such newer technologies and processes are often implemented in companies first and only later introduced in the education system (European Union, 2015; European Union, 2017).

Furthermore, in 2016 the EU granted another EUR 3.75 Million to foster a more efficient transition of VET graduates into the labour market. Thereby, the programme generated new partnerships between VET schools and VET institutions and companies. The main goal was thus to increase and improve the practical component of the VET (European Training Foundation, 2018).

With the introduction of the Education Development Strategy 2020–2030 in 2019, standards for higher education and VET were defined which serve as a guideline for reforms. Similar to the aforementioned reforms introduced in cooperation with the EU, the Education Development Strategy aims to modernise the VET and PET curricula to ensure correspondence with the labour market needs. Thereby, the quality and capacity of the VET and PET systems should increase over the defined period. The reforms derived from the strategy document mainly approach the qualifications of the personnel working in the education system, education accompanying measures and financial topics. In terms of the personnel's qualifications, different courses have been organised in four topics: increasing the efficiency of organising and implementing capacity-based learning, building a solid skill and knowledge base in entrepreneurship (since this subject has been included as a mandatory course in the majority of VET and PET programmes since 2018), organic agriculture and training of experts developing educational standards (Mkuzak, 2019). The National Center of VET Development provided this training to over

1,500 teachers, management staff of educational institutions and other specialists. Additionally, career consultants have been installed in 95 VET institutions to counsel students in their transition to the labour market. These career counselling units provide their services free of charge and not only to current students but also to graduates and VET applicants. Finally, several measures have been introduced to increase the quality and quantity of practical components of the VPET system. For example, in cooperation with the German organisation GIZ, a pilot project for a dual training system in VET has been introduced in seven VET institutions. Similarly, a project has been initiated with ETF to draft a concept for an improved work-based learning approach in which the share of school-based learning is decreased. Finally, various initiatives have been drafted or implemented to increase the efficiency of VPET institutions and allow cost reduction. Thereby, various institutions have been merged. This measure therefore continues the initiative introduced by the EU mentioned in the last paragraph (European Training Foundation, 2019).

4.2 Major Challenges

Despite the large number of reforms intended to improve the VPET system, Armenia still faces many challenges on the way to an effective VPET system. First and foremost, the implemented reforms have had little effect on the prevailing skill mismatch between the Armenian labour market and the competences of VPET graduates. This mismatch has been identified as one major driver of the high unemployment rate among the youth. Hence, improving the alignment between the needs of the labour market and the skillset of VPET graduates is crucial. The poorly studied and documented changes occurring in the labour market are strongly linked to this mismatch. Thus, changes in the needs of employing companies are not properly detected, documented, communicated and introduced in the curriculum (European Training Foundation, 2019).

Another major challenge Armenia faces is the low popularity of the VPET system compared to the other educational options. Thus, the VET system's popularity is one of the main strategic targets of the MoESCS. In order to achieve this, students' perception of the attractiveness of the VPET system must change. The availability of attractive VET programmes is also a crucial success factor. The VPET system's limited financial means are also related to the low participation in VPET. Thus, the effective and efficient use of the budget is crucial. Establishing cost-efficient structures is key to generating maximal impact with the limited means (European Training Foundation, 2019).

The limited financial means allocated to the VPET sector are directly linked to the prevailing lack of digital and IT-related infrastructure, which affects the skills and competences that can be taught in VPET programmes. IT courses are therefore rare despite the need for digital skills independent of the field of the VET programmes. Additionally, the Armenian VPET system is prone to fail in exceptional situations such as the COVID-19 pandemic. Furthermore, a higher degree of digitalisation would allow the government to implement more cost-efficient processes and structures (European Training Foundation, 2019; European Training Foundation, 2020).

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ETH Zürich
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8092 Zürich, Switzerland

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