EDUCATION SECTOR ANALYSIS FOR ARMENIA

YEREVAN 2022

Education Sector Analysis (ESA) for Armenia was commissioned by UNICEF within the framework of the Education Sector Plan Development Grant (ESPDG) to the Republic of Armenia from the Global Partnership for Education (GPE). The study was developed through close consultation with the Ministry of Education, Science, Culture, and Sports (MoESCS). The study was conducted by an expert team, peer reviewed by independent reviewers, and reviewed by staff/consultants from UNICEF and the Asian Development Bank (ADB), respectively, the Grant Agent, and the Coordinating Agency, selected by the Local Education Group (LEG), which was established by the MoESCS within the framework of partnership with the GPE.

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ABBREVIATIONS

ADB	Asian Development Bank
AMD	Armenian dram
ANAR5	Adjusted net attendance rate for 5-year-olds
ANER	Adjusted net enrollment rate
ATC	Assessment and Testing Center
BMI	Body mass index
B	Billion
CAGR	Compound annual growth rate
DHS	Demographic and health survey
EIB	Education Inspection Body
EMIS	Education management information system
ESA	Education sector analysis
EU	European Union
GDP	Gross domestic product
GER	Gross enrollment ratio
GIR	Gross intake ratio
GNI	Gross national income
GPI	Gender parity index
GPE	Global Partnership for Education
HCI	Human capital index
ICT	Information and communiaions technology
IEP	Individual educational plan
ILCS	Integrated living conditions survey
M	Million
MoE	Ministry of Environment
MoES	Ministry of Emergency Situations
MoESCS	Ministry of Education, Science, Culture and Sports
MoF	Ministry of Finance
MoTAI	Ministry of Territorial Administration and Infrastructure
MPCE	Monthly per capita consumer expenditure
MTEP	Medium-Term Expenditure Program
NCEDI	National Center for Education Development and Innovation
NCET	National Center of Educational Technologies
NCVETD	National Center for Vocational Education and Training Development
NEET	Not in employment, education or training
NER	Net enrollment rate
OECD	Organization for Economic Co-operation and Development
PISA	Programme for International Student Assessment
PIRLS	Progress in International Reading Literacy Study
PP	Percentage points
PPP	Purchasing power parity
HEI	Higher education institution
HCI	Human capital index
HDI	Human development index
RA	Republic of Armenia
RPPC	Republican Pedagogical-Psychological Center
SD	Standard deviation
SDG	Sustainable development goals
TICTRF	Textbook and Information Communication Technologies Revolving Fund
TIMSS	Trends in International Mathematics and Science Study
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VET	Vocational education and training
WB	World Bank
WDI	World development indicators
WHO	World Health Organization
WFP	World Food Programme

ACKNOWLEDGEMENTS

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This report was prepared by a core team from CIVITTA AM, led by Sevak Hovhannisyan. The work was carried out under the overall guidance of Alvard Poghosyan (Education Specialist, UNICEF) and Arman Gasparyan (Education Officer, UNICEF). The team is extremely grateful to Adrine Babloyan (Research and Evaluation Officer, UNICEF), Astghik Martirosyan (Child Rights Monitoring and Evaluation Specialist, UNICEF) for serving as peer reviewers and to Zoya Andekyan (Programme Assistant, UNICEF) for her support with administrative issues, as well as to Azniv Naslyan for proofreading the Armenian version of the final report. The team would also like to thank Gohar Mousaelyan (Project Senior Officer, ADB) and Narek Manukyan, Consultant for Supporting Asian Development Bank (ADB) in its Role as Coordinating Agency in the Global Partnership for Education (GPE) Processes for their guidance and recommendations during the various stages of the ESA.

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We apologise for any omissions and express our sincerest thanks to everyone, whether named here or not, who graciously gave their time and expertise.

INTRODUCTION

Education Sector Analysis (ESA) for Armenia was commissioned by the United Nations Children's Fund (UNICEF) within the framework of the Education Sector Plan Development Grant (ESP-DG) to the Republic of Armenia from the Global Partnership for Education (GPE). The study was conducted by CIVITTA AM, peer reviewed by independent reviewers and staff/consultants from UNICEF, as well as the Asian Development Bank (ADB). ESA for Armenia was developed through close consultation with the Ministry of Education, Science, Culture, and Sports (MoESCS).

Analysis of the general education sector in Armenia is intended to stimulate policy debate in the country, improve effectiveness of future interventions and policies, bringing the attention of all stakeholders to fundamental issues revealed. The primary aim of the study is to generate the evidence and information necessary for the successful development and implementation of education development programs.

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STUDY METHODOLOGY AND ETHICS

METHODOLOGY | This study, conducted in February-May 2022, used a mixed methodological approach, combining analysis of secondary quantitative data with qualitative methods of collecting primary data.

The main data collection method was desk research, supplemented by qualitative data collected through in-depth and semi-structured interviews with key stakeholders and informants, as well as secondary quantitative data provided by national and international statistical agencies and organizations[1].

Key findings from five sectoral GPE studies commissioned by UNICEF in 2021 were also used for this analysis. These include:

1. Equity and Fairness-Oriented Analysis of School Classroom Assessment Practices to Identify Policy Recommendations for Improvement of Student Learning Outcomes;
2. Analysis of School Teacher Management System in Armenia;
3. Feasibility Analysis of the National School Management and Governance Approaches;
4. Comprehensive Sectoral Analysis of Pre-Primary Education;
5. Analysis of Armenia's National Learning Assessment System.

Overall, the research team followed the United Nations Educational, Scientific and Cultural Organization (UNESCO), World Bank (WB), UNICEF, GPE "Education Sector Analysis Methodological Guidelines" (Vols. 1-3) for the preparation of this report (UNESCO, WB, UNICEF, GPE, 2014; UNESCO, UNICEF, GPE, UK Foreign & Commonwealth & Development Office, 2021).

The main data sources used in this study are the databases of Armstat; Education management information system (EMIS); Ministry of Territorial Administration and Infrastructure (MoTAI); Interactive Budget of the RA Government; UNESCO Institute for Statistics; WB Human Development Indicators; and UN World Population Prospects.

Government policies, programs and regulations pertaining to the education sector, as well as school budgets, were also extensively reviewed and used in the analysis accordingly.

The main methods used in the study to analyze quantitative data were trend analysis, benchmarking, and regression analysis.

In addition to the analysis of secondary data, insights into the development of the education sector were obtained through interviews with key stakeholders and informants.

ETHICS | The research team adhered to the UNICEF Procedure for Ethical Standards in Research, Evaluation, Data Collection and Analysis (UNICEF, 2021) and worked in accordance with the UNICEF Strategic Guidance Note on Institutionalizing Ethical Practice for UNICEF Research (UNICEF, 2013), and the UNICEF Policy on Personal Data Protection (UNICEF, 2020).

All project team members signed a non-disclosure/confidentiality agreement, and those who were involved in the primary data collection process also signed a code of conduct agreement.

The study was conducted in compliance with the principles of gender equality, fairness, human rights, dignity, and confidentiality of the participants.

Verbal and/or written informed consent was obtained from participants prior to their participation in the study. The research team provided sufficient information and assurances about what participation amounts to, ensuring understanding and allowing for a fully informed and voluntary decision without any form of pressure or coercion.

[1] For more details on methodology see ESA Study Protocol, UNICEF, January 21, 2022.

EXECUTIVE SUMMARY

Education Sector Analysis for Armenia was commissioned by the United Nations Children's Fund (UNICEF) within the framework of the Education Sector Plan Development Grant to the Republic of Armenia from the Global Partnership for Education (GPE).

This study is intended to stimulate policy debate in the country, improve effectiveness of future policies, bringing the attention of all stakeholders to the fundamental issues revealed. The primary aim of the study is to generate the evidence necessary for the successful development and implementation of education development programs.

The main data collection method was through desk research, supplemented by qualitative data collected through in-depth and semi-structured interviews with key stakeholders and informants, as well as secondary quantitative data provided by national and international statistical organizations.

ANALYSIS OF SOCIO-DEMOGRAPHIC, HUMANITARIAN AND EMERGENCY CONTEXTS, AS WELL AS RESPECTIVE PAST TRENDS AND FUTURE PROSPECTS AFFECTING THE SCHOOL (PRESCHOOL) EDUCATION SECTOR

Demographic context: The study forecasts the continuation of Armenia's population decline over the next decade, given the current trends. At the same time, forecasted changes in the age and geographic distribution of the population will have important implications for the education sector, and the government should reallocate resources accordingly.

In particular, the study forecasts that by 2030, the number of newborns will decrease by 14.7%, while the pre-primary age (3-5 years old) population will decrease by 15.8%.

The school-age population will decrease by 5.9%, of which the primary age (6-9 years old) population will decrease by 14.0%, the lower secondary age (10-14 years old) population will decrease by 9.5%, and the upper secondary age (15-17 years old) population will increase by 13.2%,

The age dependency ratio will increase from 57.5% in 2020 to 66.5% in 2030, draining already strained government resources as demand for social assistance increases.

The proportion of children residing in Yerevan will increase by 5 percentage points to 40.7%, while in rural and other urban settlements it will decrease to 35.1% and 24.2% respectively; at the same time, the school-age population will increase in Yerevan by 11.2%, while decreasing in the urban and rural settlements of the marzes by 16.8% and 13.2%, respectively.

Poverty: Child poverty remains a grave concern, with the poverty rate among children amounting to 33.9% in 2020.

Among out-of-school children, in 2020, 4.0% of the poor and 20.7% of the extremely poor did not attend school because of the need to work or due to the high costs.

According to the 2020 Human Capital Index, which measures the amount of human capital that a child born today can expect to attain by the age of 18, a child born in Armenia today will be 58% as productive when she grows up as she could be if she enjoyed complete education and full health.

Disability: Children with registered disability status accounted for 1.2% of the population under the age of 18, with their number amounting to 8,771 in 2020.

The two leading causes of disability among children are diseases of the nervous system, and mental and behavioral disorders. In 2020, diseases of the nervous system accounted for 23.9%, and mental and behavioral disorders - 28.4% of all registered cases of child disability. The number of children with mental and behavioral disorders leading to disability is on the rise, with the absolute number increasing by 72% in 2010-2020.

Health: One of the main health-related problems among children is malnutrition. In 2021, 21.4% of households in Armenia were food insecure, while more than half of children aged 6-23 months did not receive a diet that met the minimum requirements.

In 2020, among out-of-school children, the main reason for not attending school was disability

or illness for 0.9% of poor and 3.9% of extremely poor children.

Hazards: More than half of schools in Armenia, where two-thirds of schoolchildren study, are subject to high seismic risk. Of the 1,402 school in Armenia, 769 are in the high danger zone and 475 in the moderate danger zone. In Yerevan, all schools are in the high danger zone.

Exposure to secondary hazards is low, but 70 schools are within a radius of 50km from the Metsamor nuclear power plant, mainly in Yerevan and Armavir.

COVID-19: During the pandemic, school-age children in 13.8% of households did not attend online classes, 88% of them due to lack of technical means. During the pandemic, in 28.6% of households with school-age children with disability, children did not attend online classes.

In 2020, there was only one computer per 17.1 students in general education schools in Armenia. As of 2022, eight out of ten school computers are either out of order or out of date.

Moreover, in 2020, only 63.1% of urban and 50.8% of rural households had at least one member with access to a computer. And only 80.1% of urban and 71.5% of rural households had at least one member with access to the Internet.

Conflict in and around Nagorno-Karabakh: As a result of the escalation of the conflict in 2020, 107 schools came under the control of Azerbaijan. Less than 18,000 schoolchildren out of 24,000 who studied before the escalation of conflict in 2020 are currently studying in Nagorno-Karabakh. In communities bordering Azerbaijan, particularly in Syunik and Tavush, security concerns and exposure to conflict further exacerbate vulnerabilities in children, including their access to quality education.

ANALYSIS OF PUBLIC EXPENDITURE ON SCHOOL (PRESCHOOL) EDUCATION, MACRO-ECONOMIC AND PUBLIC FINANCE CONTEXT AFFECTING THE EDUCATION SECTOR

Macroeconomic context: Armenia has shown moderate economic performance over the past decade, with GDP growth averaging 3.4% per year. Long-standing structural problems are restraining the Armenian economy from reaching its full potential. Outward migration, governance gaps, aging population, and skills mismatches, coupled with geopolitical tensions in the larger region, pose risks to a sustained recovery.

Public finance context: Over the past decade, public revenues have increased by 7.2% per annum in nominal terms, with a revenue-to-GDP ratio averaging 23.9%. The general government's budget deficit accounted for 3.2% of the GDP in 2010-2020. Meanwhile, government interest payments have grown by 18.5% per annum. In parallel, the share of capital expenditure in the total expenditure declined from 20% in 2010 to just 12.4% in 2020.

Public spending on education: The share of education in total public expenditure declined from 10.1% in 2018 to 9.1% in 2020, as the growth of public spending on education was slower than the growth of general government spending.

The share of public spending on education in the GDP declined from 3.3% in 2010 to 2.8% in 2020. By this indicator, Armenia was the worst performer among peer and benchmark countries, since public-expenditure-on-education-to-GDP ratio was 3.8% in Georgia, 6.1% in Moldova, and 4.5% in the Baltic States in 2020.

Armenia is also the worst performer in terms of per capita public expenditure on education among peer and benchmark countries. On a per capita basis, general government expenditure on education in Armenia amounted to 359 purchasing power parity (PPP) USD in 2020, while in Georgia and Moldova it was about 50% higher.

National financial effort for education and the government's capacity to finance education are shrinking. The national financial effort for education is the share of education in total public spending, excluding the service of debt, and reflects the priority given by the Armenian government to education, within the expenditure over which it has control. This share was 9.9% in 2020 compared to 11.1% in 2018.

The government's capacity to finance education depends on the revenue it can generate from taxes. It is the ratio of public spending on education to general government total revenue, excluding grants, which was 11.2% in 2020 compared to 10.9% in 2018. The increase indicates a shrinking capacity to finance education.

The state budget execution in the field of education in 2016-2020 averaged about 90%.

In 2016-2020, communities' spending (Yerevan

and the marzes) on preschool education averaged 18.3B AMD, encompassing 41.4% of communities' total spending on education and 14.3% of communities' total spending on all items.

According to the Medium-Term Expenditure Program (MTEP) for 2022-2024, state budget expenditures on education for 2024 are planned at the level of 1.7% of the GDP.

Major projects implemented by multilateral donors: The WB, traditionally the main executor of development projects in the field of education in Armenia, over the past two and a half decades has implemented four projects totaling 90M USD.

Currently, the Asian Development Bank (ADB) is implementing an 88.5M USD project (with an additional 18.5M USD co-financed by the Armenian government) to improve and strengthen 46 schools.

School budgets: The share of teaching staff compensation in school budgets is high compared to peer and benchmark countries. The share of non-teaching staff compensation in Armenia is also on the higher end; therefore, the share of other current expenditures is one of the lowest in Armenia, which may entail an inadequate supply of teaching materials.

Spending on education by levels: Primary and secondary education together consumed two-thirds of public spending on education by sub-sectors in 2016-2021.

On a per capita basis, Armenia's spending on pre-primary education is the lowest among peer and benchmark countries.

Even when excluding the pandemic year of 2020, average spending per preschool in Armenia grew by an average of only 0.5% per annum in 2016-2019, actually declining in real terms when adjusted for inflation. In pre-pandemic 2019, spending per pre-primary student accounted for only 1,076 AMD (or 2.2 USD) per working day.

Total spending on upper secondary education increased by 0.6% per year in real terms in 2016-2021. At the same time, real spending on primary education increased at an annual rate of 0.3%, while on lower secondary education decreased at a rate of 1.7%.

Public spending on primary and secondary education in Armenia, at $270.2 PPP in 2020, is the lowest among peer and benchmark countries.

In 2022, the planned state budget funding for secondary education corresponds to an annual real growth of only 0.3% compared to 2019, while planned funding for primary education corresponds to an annual real growth of 5.8%.

The planned state budget spending on primary and secondary education, if implemented, will correspond to an annual growth of 2.2% compared to 2019, which in of itself will be a milestone for the Government, especially given that GDP growth over the same period is projected to be less than 2%.

Meanwhile, in 2021, real spending per student in both primary and secondary education was lower than in 2016.

Teacher's compensation: The average net salary of teachers exceeds the national poverty line by only 84%. The average annual salary of teachers is 58% of the GDP per capita. The same indicator is 168% in Latvia, 182% in Slovenia, 197% in Poland, 361% in Turkey.

In order to balance the average salary of teachers with the average salary in Armenia, the Government needs to allocate an amount equal to approximately 1.7% of state budget revenues.

ANALYSIS OF POLITICO-INSTITUTIONAL MACRO-LEVEL CONTEXT AFFECTING POLICYMAKING IN THE EDUCATION SECTOR

The merger of the Ministry of Education and Science, the Ministry of Culture, the Ministry of Youth Affairs and Sports into the Ministry of Education, Science, Culture and Sports (MoESCS) has significantly reduced interdepartmental bureaucracy. However, in some cases, most prominently in the case of extracurricular education, there is an issue of making the management more coherent.

The distribution of functions between the MoESCS, on the one hand, and educational departments of regional and community administrations on the other, is not entirely clear-cut, as there are some functional overlaps.

The Department for General Education of MoESCS faces issues with the development of institutional and professional capacities in the evaluation of trainings, educational technologies, textbooks, etc.

The MoESCS and the agencies providing services to the MoESCS (Assessment and Testing Center,

National Center for Education Development and Innovation, National Center of Educational Technologies, etc.) need capacity building, especially when it comes to monitoring, analysis, and evaluation.

Internal evaluation of schools is carried out inefficiently, while external evaluation by an independent evaluator is not carried out at all.

The Education Management Information System (EMIS) collects large amounts of information from schools, but schools do not receive any feedback from the MoESCS.

The parent and student councils, operating under the auspices of the MoESCS, are not effective.

ANALYSIS OF SCHOOL (PRESCHOOL) ENROLLMENT, SCHOOL (PRESCHOOL) COVERAGE, AND INTERNAL EFFICIENCY WITH A FOCUS ON SOCIAL EQUITY

Armenia's general education system encompasses preschool education and compulsory secondary education (grades 1-12). The latter consists of primary (grades 1-4), lower secondary (grades 5-9) and upper secondary (grades 10-12) education. General education in public schools is free and the official primary-school-entry age is age six.

Enrollment and supply coverage in preschool education: Net enrollment of children aged 3-5 was 42.0% in 2019 against 28.5% in 2010, meanwhile gross enrollment, which also includes 6 and 7 years old, was 61.6%. Thus, more than half of the children in the 3-5 age group do not attend preschool and presumably enter primary school without necessary skills.

In Yerevan, the gross enrollment ratio in pre-primary education was 37.1% in 2019. Broken down by type of settlements, in 2019, gross enrollment was 39.6% in urban settlements, while 25.4% in rural settlements.

In 2010-2020, the number of kindergartens (public and private) increased by 271 (or 42.4%), meanwhile, the number of children enrolled in preschools (public and private) increased by 40.8%. In parallel, the overall preschool age population (0-5 years old) decreased by 7.5%.

For the children aged 3-5 years old, preschool supply coverage is about 70%. In recent years, the increase in the number of kindergarten places in the marzes has significantly improved enrollment, although in 2020, only 37.2% of children aged 0-5 could be covered by available places.

In Armenia, pupil per teacher ratio in pre-primary education stood at 6.3 pupils in 2018. The same ratio was 11.9 in Moldova, 9.7 in Latvia, 12 in Slovakia, while the average for Organization for Economic Co-operation and Development (OECD) countries was 15.2. Thus, the pupil per teacher ratio in Armenia was significantly lower than the OECD average.

Preschool education in Yerevan is free of charge for service users, while in the marzes/communities there are parental fees, which vary by community. However, preschool education is heavily subsidized in the marzes/communities.

Enrollment and supply coverage in school education: One in ten children of the appropriate age is not currently enrolled in primary or middle school. In particular, 15.9% of 6-year-olds (1st grade), 9.9% of 9-year-olds (4th grade), 13.2% of 14-year-olds (9th grade) out of the permanent population were not enrolled in general education in 2020.

The gross enrollment ratio in Armenia is the lowest among peer and benchmark countries. Meanwhile, gross enrollment in primary education in the urban settlements of the marzes exceeds 100%, due to a significant number of pupils from neighboring villages being enrolled in urban centers.

There is a significant gender gap in the high school enrollment. Girls' enrollment is 10 percentage points higher than that of boys', indicating that boys are less likely to continue their education.

In 2019-2020, about 44,500 school-age children out of the permanent population were not enrolled in compulsory education or did not attend classes.

Schools in the urban settlements of the regions are overcrowded (enrollment/design capacity = 106.3%) and supply is limited (design capacity/population (6-17) = 84.7%).

In Armenia, the pupil-to-teacher ratios in elementary and lower secondary education are one of the highest among peer and benchmark countries.

Analysis of the impact of school (preschool) education on national economic and human development goals

Economic impact of education: The employment rate among people with higher education is consistently higher than those with lower levels of education. In 2010-2020, the employment rate of individuals with higher education averaged 61.8%, while those with upper secondary education averaged 47.8%.

In 2020, among 15-29-year-olds, 30.1% were not in employment, education or training (NEET). There were also significant differences in NEET rates by age group, gender, and settlement type.

In 2020, the average monthly net wage/income of people with a tertiary education was 25.7% higher than those with a lower level of education. Higher education provides a higher income.

Social impact of education: The fertility rate in Armenia, depending on the level of education, aligns with the mainstream theoretical approach. Armenia's Demographic and Health Survey (DHS) 2015-2016 data shows that at higher levels of education, the total fertility rate, as well as the average number of children ever born to women aged 40-49, declines.

Armenia's DHS 2015-2016 data also shows that married women aged 15-49 with higher education are more likely to use modern methods of contraception than women with lower secondary education. In parallel, the proportion of women with a live birth, taking folic acid tablets or multivitamins during pregnancy, is lower among women with lower secondary education than among women with higher education.

Impact of education on trust, civic attitudes, and health: In Armenia, higher levels of education are associated with civic activism, trust in state institutions, and health-promoting behavior.

SUMMARY OF KEY FINDINGS

Analysis of socio-demographic, humanitarian and emergency contexts, as well as respective past trends and future prospects affecting the school (preschool) education sector

1. In the marzes, by 2030, the population of preschool, primary and lower-secondary age children will decrease, while the population of upper-secondary age children will increase. In Yerevan, the population of lower and upper secondary age children will increase by one tenth and one third respectively, significantly driven by internal migration from rural and other urban areas.
2. Child poverty remains a grave concern as a third of children are poor, with child poverty rates among the highest of any age group. Among extremely poor out-of-school children, every fifth child did not attend school because of a need to work or due to lack of financial means.
3. HIV, AIDS, and malaria are not a serious public health problem in Armenia, although recently there is a worrying trend of growth in HIV cases among children. Meanwhile, respiratory diseases continue to be a significant disruptor to the educational process, especially in preschool and primary education. In Armenia, according to officially reported coverage, every tenth child under the age of 3 is not vaccinated. The vaccination rates are lower in cities than in rural areas. Overall, the vaccine hesitancy is becoming an increasingly serious problem in Armenia.
4. Child malnutrition continues to be a major problem, as every fifth household in Armenia suffers from food shortages. The school meal program implemented in Armenia since 2012 has the potential to have a high return in terms of improved health and learning outcomes.
5. The number of registered cases of childhood disabilities is on the rise, and the actual number may be even higher due to underreporting, identification, and related issues. The introduction of universal inclusive education is a significant achievement. However, therapeutic, pedagogical, and psychological support is not always adequately available, and school (preschool) infrastructure is not always properly adapted to the needs of children with disabilities.
6. More than half the schools in Armenia are exposed to high seismic risk. The majority of school buildings do not conform to modern requirements of earthquake resistance.
7. The average risk level from secondary hazards is low, but 70 schools are located within a radius of 50 km from the Metsamor nuclear power plant, mainly in Yerevan and Armavir.
8. The COVID-19 pandemic has revealed the unpreparedness of the education system for distance learning - from access to the Internet and computers, to availability of online educational content, the regulatory framework, and specialists who develop and deliver digital learning and teaching. In terms of content, the launch of the e-school Armenia online platform is a significant positive development, although much remains to be done to ensure high-quality content.

Analysis of public expenditure on school (preschool) education, macro-economic and public finance context affecting the education sector

9. Armenia is one of the worst performers among peer and benchmark countries when it comes to public spending on education. Armenia lags both in terms of the share of government spending in GDP and in spending per capita or per student, at any level of education.
10. Teachers' average net wage is only 84% above the national poverty line. The average annual salary of teachers is only 58% of the GDP per capita, while in the benchmark countries, it accounts for a much higher share. The recently adopted Government program, which significantly increases the

salaries of teachers who have passed voluntary attestation, needs to be accelerated.

11. In 2016-2021, real spending on primary and upper secondary education grew at an annual rate of 0.3% and 0.6%, respectively, while real spending on lower secondary education decreased by 1.7% year on year.

Analysis of politico-institutional macro-level context affecting policymaking in the education sector

12. The merger of the three ministries into the MoESCS has significantly reduced interdepartmental bureaucracy.
13. The distribution of functions between the MoESCS and regional/community administrations is not entirely clear-cut, as there are some functional overlaps, especially in the context of community consolidation.
14. The Department for General Education of the MoESCS faces issues with the development of institutional and professional capacities. The MoESCS and the agencies providing services to the MoESCS need capacity building, especially when it comes to monitoring, analysis, and evaluation.
15. The statutes of the departments of the MoESCS, regional department of education, and agencies providing services to the MoESCS contain duplicate provisions.
16. The internal evaluation of schools is conducted inefficiently, while external evaluation by an independent evaluator is not carried out at all, though this is a legal requirement.
17. The effectiveness of the functioning of school boards is low.

Analysis of school (preschool) enrollment, school (preschool) coverage, and internal efficiency with a focus on social equity

18. In pre-pandemic 2019, the net enrollment rate for children aged 0-2 years was 5.0% and the gross enrollment ratio for children aged 3-5 was 61.6%.
19. Over the past decade, enrollment ratios have deteriorated for all levels of school education. In primary education (grades 1-4), the net enrollment rate was 90.1% in 2020 against 94.2% in 2011. In lower secondary education (grades 5-9), the net enrollment rate was 89.2% in 2020, down 9.4 percentage points compared to 2011. In upper secondary education (grades 10-12), the gross enrollment ratio was 57.9% in 2020, down 21.4 percentage points from 2011.
20. Approximately one in ten ninth-graders does not continue their education, even though 12-year education is compulsory in Armenia since 2017.
21. There is a significant gender gap in high school enrollment, as the gross enrollment ratio for girls was 63.5% in 2020, while for boys it was 10 percentage points lower.
22. In 2020, the gross intake ratio to the last grade of primary and lower secondary education was 93.2% and 90.1%, respectively. For the 2012 cohort who reached 9th grade in 2020, the ratio of 9th graders to 1st graders was 92%.
23. The pupil-to-teacher ratio in the state general education institutions of Armenia was 12.7 in 2019. Compared to the benchmark countries, the pupil-to-teacher ratio in Armenia was the lowest in upper secondary education but was one of the highest in primary and lower secondary education.
24. Armenia has a significant number of very small schools. In 2020, 6.3% of schools had 20 or fewer pupils, where only 0.3% of all pupils were enrolled.

Analysis of the impact of school (preschool) education on national economic and human development goals

25. Key economic indicators characterizing the labor resources in Armenia, such as participation rate, employment rate, and unemployment rate, have been relatively steady over the past few years.
26. A higher level of education appears to be economically beneficial. The return on investment in education is significantly higher at the tertiary level of education.
27. Below-replacement fertility rate poses a significant challenge, as Armenia faces the prospect of a declining population, which may be associated with a deterioration in long-term economic growth prospects.

28. Compared to individuals without education, those with education appear to show greater civic engagement; which, however, is not the case with their trust towards public institutions.

29. Compared with individuals without primary education, those with a higher level of education had a higher self-rated health status. This finding supports the assumption that the more educated people are, the more informed choices they make about their health.

SUMMARY OF POLICY RECOMMENDATIONS

1. Given the forecasted increase in the population of upper-secondary age children in Yerevan, the government should accelerate the expansion of high schools in Yerevan. The government should optimize the use of school buildings in rural areas, considering their shared use as preschool, out-of-school, and community centers.
2. The government should fine tune its social assistance policy so that no child in Armenia refrains from attending school due to financial reasons.
3. The government should develop and implement a long-term public information and education strategy to raise the awareness of both children and parents of healthy lifestyles, with particular attention paid to vaccination, hygiene, no smoking, regular exercise, etc.
4. The government should enforce infrastructure standards, as the problem of physical accessibility of general education schools for children with disabilities remains, to a significant extent, unresolved in Armenia.
5. The government should further prioritize the improvement of seismic resistance and the construction of modern school and preschool buildings.
6. The government should develop evacuation procedures for pupils and appropriately communicate them with the beneficiaries. Shelters should be constructed/upgraded to reduce possible exposure to radiation.
7. The government should invest in community centers, especially in rural areas, to provide access to the Internet and computers to economically disadvantaged children. The government should invest heavily in computers for schools, as most existing computers are either out of order or legacy PCs.
8. The government should dramatically increase spending on education and target achieving the level of peer countries in the mid-term perspective. Particular attention should be paid to the very significant increase in teachers' salaries.
9. The government should set the goal of achieving 100% enrollment in pre-primary education.
10. Additional research is needed to identify the reasons behind the choice of some basic school graduates not to continue with their education.
11. The government should improve the system for identifying out-of-school children/children at risk of dropping out, and take effective measures to keep them in school.
12. The government should address the relatively low enrollment of boys in high schools.
13. The distribution of functions between the MoESCS and educational departments of regional/community administrations should be reviewed and clarified, especially in the context of community consolidation. The statutes of the departments of the MoESCS and agencies providing services to the MoESCS should be revised to avoid duplications and distribute functions more consistently.
14. The government needs to address the capacity building of consolidated communities to transfer a part of the authority to manage educational institutions.
15. The capacities of the mid-level management of the MoESCS in coordinating the activities of agencies providing services to the MoESCS need to be further developed.
16. The monitoring, analysis, and evaluation capabilities of the Department for General Education of MoESCS and agencies providing services to the MoESCS needs to be further developed.
17. External evaluation of schools should be regularly conducted, and an effective system of school accountability should be introduced.

CHAPTER 1:

ANALYSIS OF SOCIO-DEMOGRAPHIC, HUMANITARIAN AND EMERGENCY CONTEXTS, AS WELL AS RESPECTIVE PAST TRENDS AND FUTURE PROSPECTS AFFECTING THE SCHOOL (PRESCHOOL) EDUCATION SECTOR

Education is one of the cornerstones of a country's development, an investment in human capital that enhances a country's overall productivity and competitiveness. The relationship between education and economic development is twofold. On the one hand, strong economic performance provides a solid financial basis for the development of the education sector and contributes to the effective realization of the educational potential. On the other hand, quality education activates the labor market, providing a competitive workforce that propels the country forward in the economic race. All this ultimately improves the well-being of the population (Savvides & Stengos, 2008) (Bucci, Prettner, & Prskawetz, 2019).

Opportunities for the development of the education sector are largely related to the country's macroeconomic context. A favorable macroeconomic and enabling social environment is a powerful impetus for the design and implementation of development programs in the field of education.

This section analyzes the implications of the demographic, social and humanitarian contexts for the development of the education sector in Armenia. The consequences of the COVID-19 pandemic and the escalation of the conflict in and around Nagorno-Karabakh in 2020 will also be addressed.

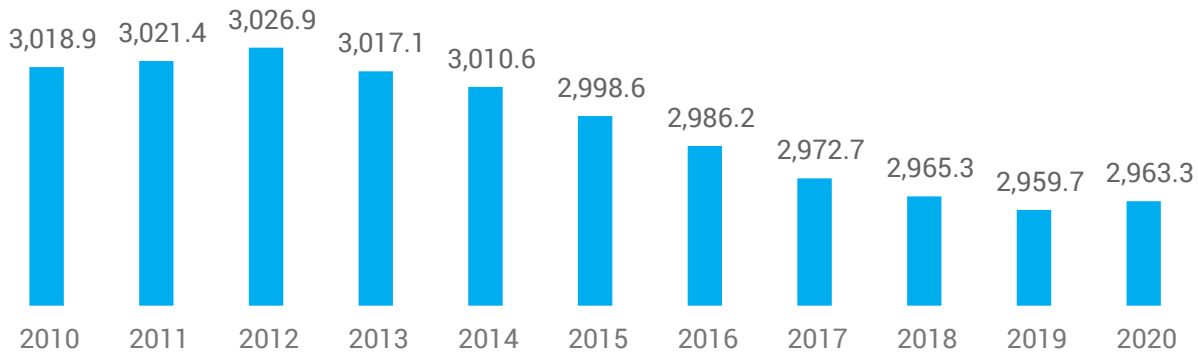
SECTION 1-1: ANALYSIS OF THE DEMOGRAPHIC CONTEXT

Armenia has experienced a significant demographic decline over the past 30 years. The population was estimated at 2.96M in 2020, down from 3.57M in 1990 (permanent population as of the end of the year) (Figure 11). Among the reasons for this decline, were substantial outward migration and a sharp drop in the birth rate caused by protracted economic stagnation and the first phase of the conflict in and around Nagorno-Karabakh in the 1990s.

This general trend of population decline continued throughout 2010-2020, as the population in 2020 was 55,600 less than in 2010. The decline was particularly significant in the 15-24 age group, where numbers fell by a third from 523,000 in 2010 to 347,000 in 2020 (UN, 2019). This sharp decline is reflected in the average annual number of people who did not survive the 16-25 age group, which was 7,082 in 2013-2019 (Figure 12). The decline in the 15-24 age group exerts a strong negative effect on GDP growth (Macunovich, 2012).

> Population decline increases sharply at the age of 16 years, indicating a spike in outward migration at this age

FIGURE 1-1 POPULATION DYNAMICS IN ARMENIA, 1000 PEOPLE, 2010-2020

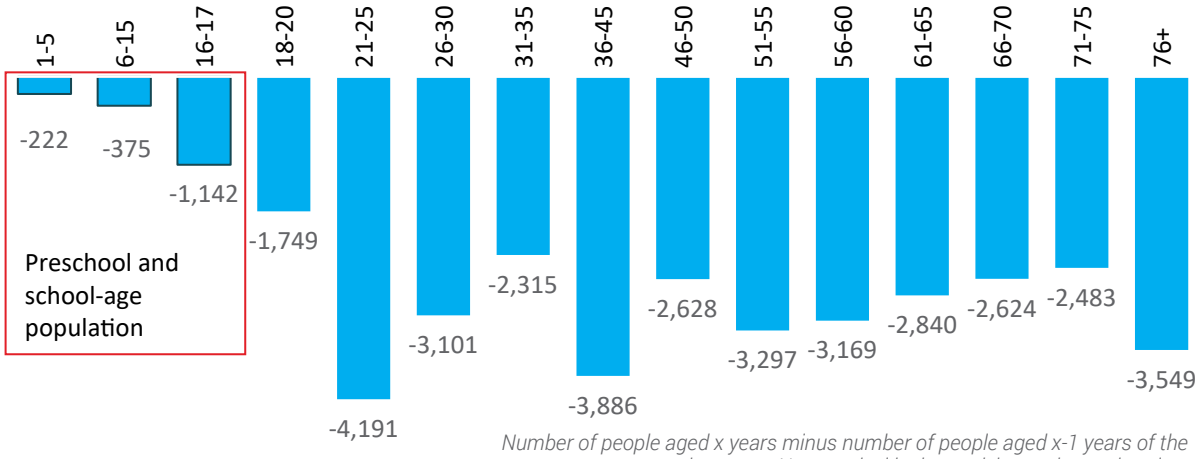


Permanent population as of the end of the year
Source: Armstat, 2022

In 2020, the population increased slightly (by 3,557) compared to the previous year, mainly due to border closures and travel restrictions imposed because of the COVID-19 pandemic (of the 3,600 increase, 200 was due to natural increase, 3,400 due to net migration inflow; in the previous year, the natural increase was 9,800 and the net migration outflow was 15,400).

In 2020, the country suffered significant losses because of the military hostilities in and around Nagorno-Karabakh.

FIGURE 1-2 ANNUAL NUMBER OF PEOPLE NOT SURVIVING THE RESPECTIVE AGE GROUP, 2013-2019



Number of people aged x years minus number of people aged x-1 years of the previous year. Non survival is due to dying and net migration.
Source: ESA based on Armstat, 2022

In 2020, the year of the escalation of conflict and the COVID-19 pandemic, the number of deaths increased by 38.1% compared to the previous year (from 26,186 to 36,170) (Armstat, 2022a). In particular, the death rate among males (deaths per 1,000 people of the same age group) in the 15-19 age group increased from 0.5 to 11.5, and in the 20-24 age group - from 0.8 to 7.3 (Armstat, 2021f).

In terms of gender, in 2010-2020, women accounted for an average of 52.4% of the population. In terms of place of residence, most of the population (63.6% on average for 2010-2020) lived in urban settlements.

> Population decline was caused not only by outward migration, but also by a decrease in the number of births. Fertility rate is well below the replacement rate

The natural increase in the population tended to decrease. In 2019, the pre-pandemic year, the rate of natural increase was 3.4 against 5.5 in 2010

(per 1,000 people). In 2020, the rate dropped to 0.1. The decline in natural increase was mainly caused by the decrease in the number of births (44,825 in 2010 against 36,041 in 2019), while the number of deaths remained relatively stable in 2010-2019 (averaging 27,359).

In parallel, the net outward migration for the entire period of 2010-2020 amounted to 226,486 people, with the net balance negative for every single year of the decade except for 2020 (Armstat, 2022).

> The study projects that over the next decade the number of newborns will decrease by 14.7%, while school-age population will decrease by 5.9%

Over the past decade, the total fertility rate increased slightly from 1.486 in 2010 to 1.656 in 2020, remaining well below the replacement fertility rate. The marriage rate (marriages per 1,000 total population) decreased from 6.0 in 2010 to 4.1 in 2020 (5.3 in pre-pandemic 2019). Simultaneously, the divorce rate (divorces per 1,000 total population) increased from 1.0 in 2010 to 1.1 in 2020 (1.3 in pre-pandemic 2019) (Armstat, 2021g). In 2021, the marriage rate reached 5.8, while the divorce rate was 1.3 (Armstat, 2022a).

The significant number of young male deaths because of the escalation of conflict in and around Nagorno-Karabakh in 2020 (the official number of Armenian citizens killed is 3,139 (Armstat, 2022a)) will have severe consequences in the years to come, including, but not limited to, the impact it will have on the number of marriages, and consequently, the number of newborns. The study forecasts that by 2030, the total number of newborns (all factors considered) will decrease by 14.7% compared to 2020.

Demographic changes have huge implications for the development of the education system, requiring policy adjustments, especially regarding the allocation of financial resources, the construction of schools and the recruitment of teaching staff. Considering the importance of timely forecasts of the school-age population, the study has made population projections up to 2030. The approaches and assumptions underlying the RA population projections are illustrated in Table 1-1.

TABLE 1-1 DEMOGRAPHIC FORECASTING MODEL, APPROACH, AND KEY ASSUMPTIONS

INDICATOR	DESCRIPTION
Demographic database	Population Census conducted by the RA Statistical Committee in 2011. Official statistics of the permanent population as of the end of the year.
Factors considered	• Natural increase – Fertility and Mortality. • Net migration – Inflow and Outflow.
Forecast start year	2021
Forecast end year	2030
Disaggregation	Armenia, Yerevan, urban (excluding Yerevan), rural, males, females, age.
Basis for forecasts	Median demographic change for the period of 2012-2019.
Shocks considered	• The escalation of Nagorno-Karabakh conflict in 2020, as a factor that reduced the male population, and as a factor of potential increase in the population. • COVID-19 pandemic, as a factor in population decline.

Source: ESA

Details of the forecasting model are presented in the Annex 1.1. What follows is a discussion of some of the key findings of the population projection.

PROJECTIONS FOR ARMENIA | The population of Armenia is forecasted to decrease by 147.200 people or by 5% in 2020-2030, reaching 2.82M people in 2030. The decline will be concentrated in the 0-13, 24-38, 54-65 age groups.

The age dependency ratio (the ratio of non-working age - 0-15 years old and 63 years and over - to working-age population - 16-62 years old), which

was 57.5% in 2020, is forecasted by the study to reach 66.5% in 2030. The increase in the dependency ratio indicates that the required potential social support will remain high over the next decade.

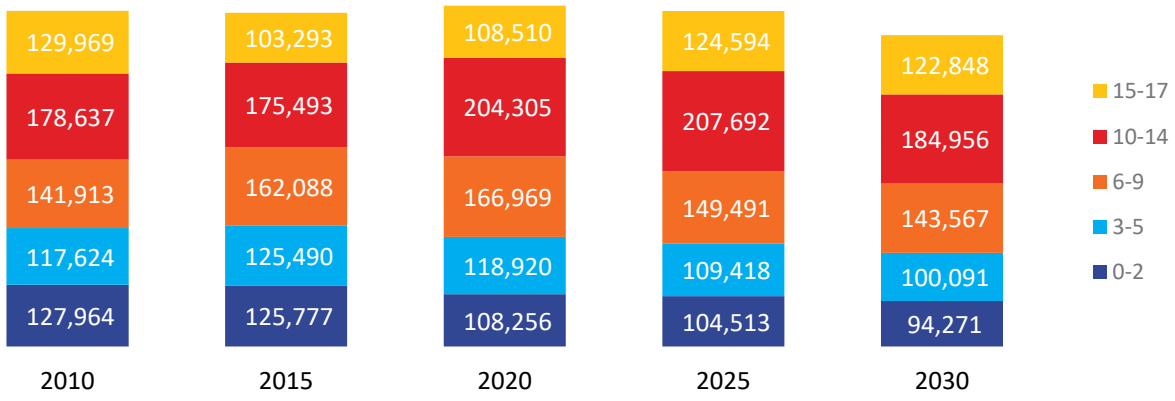
> Age dependency ratio will increase, exerting additional pressure on the strained resources of the Government

In 2020, the proportion of children aged 0-17 within the population was 23.9%, and in 2030 it will decline to 22.9%, while the number of children will decrease by 8.7% in 2020-2030.

Among children, the proportion of boys will decrease to 52.7% in 2030 against 53.1% in 2020, while the number of boys and girls will decrease by 9.3% and 7.9%, respectively.

Broken down by age groups, in 2020-2030, the population of pre-primary (3-5 years old) age will decrease by 15.8%, while primary (6-9 years old) and lower secondary age (10-14 years old) groups will decrease by 14.0% and 9.5%, respectively. Only the population of upper secondary age (15-17 years old) will increase - by 13.2% in 2020-2030 (Figure 1-3).

FIGURE 1-3 PERMANENT POPULATION OF ARMENIA, 0-17 AGE GROUP, ACTUAL AND FORECASTED, 2010-2030



Source: ESA, Armstat, 2022

In 2020, 35.7% of RA children aged 0-17 were residing in Yerevan, while 36.4% in rural and 27.8% in urban settlements, excluding Yerevan (hereinafter - other urban). It is forecasted that by 2030 the proportion of children living in Yerevan will increase to 40.7%, while in rural and other urban settlements will decrease to 35.1% and 24.2%, respectively.

PROJECTIONS FOR YEREVAN | In 2020-2030, the total population in Yerevan is projected to increase by 1.1%, while the number of children aged 0-17 will increase by 3.9%. Broken down by age groups, the population of pre-primary (3-5 years old) age will decrease by 7.6%, while of school (6-17 years old) age will increase by 11.2% (Figure 14).

Among children, the proportion of boys in Yerevan will decrease to 46.3% in 2030 against 52.5% in 2020.

> The proportion of children residing in Yerevan will increase from 35.7% in 2020 to 40.7% in 2030, with school- age population in Yerevan increasing by 11.2%

PROJECTIONS FOR OTHER URBAN SETTLEMENTS | In other urban settlements, the number of children aged 0-17 is projected to decrease by 20.4% in 2020-2030. Broken down by age groups, the population of pre-primary (3-5 years old) age will decrease by 31.9%, while of school (6-17 years old) age will decrease by 16.8%.

Among children, the proportion of boys in other urban settlements will decrease to 47.6% in 2030 against 52.8% in 2020.

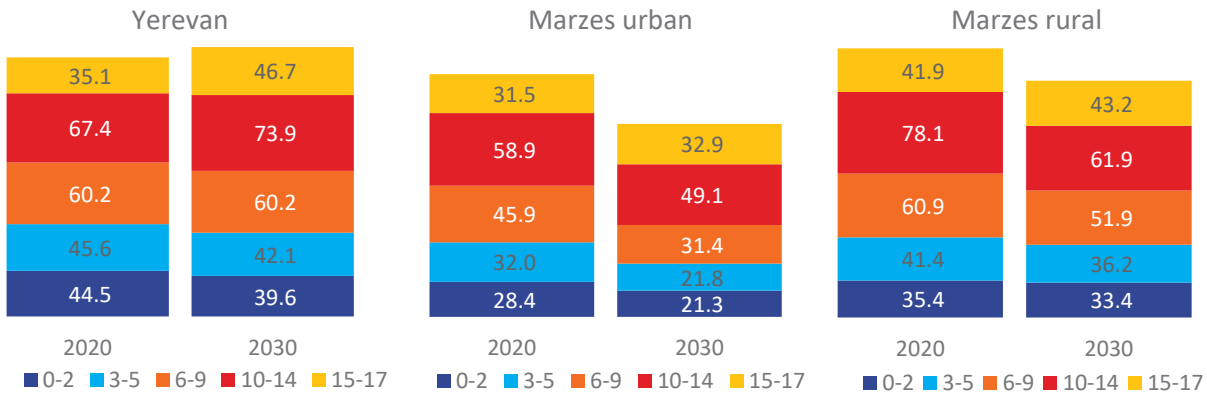
> School-age population will decrease in the urban and rural settlements of the marzes by 16.8% and 13.2%, respectively

PROJECTIONS FOR RURAL SETTLEMENTS | In rural settlements, the number of children aged 0-17 is projected to decrease by 12.0% in 2020-2030, which implies that the under-utilization of existing school places will increase. Broken down by age groups, the population of pre-primary (3-5 years old) age will decrease by 12.5%, while of school (6-17 years old) age will decrease by 13.2%.

Among children, the proportion of boys in rural settlements will decrease to 49.3% in 2030 against 53.9% in 2020.

The war in Ukraine and the sanctions imposed on Russia have caused a large influx of people from Russia, many of whom have moved to Armenia with families, increasing the demand for Russian-language schools and teachers.

FIGURE 1-4 PERMANENT POPULATION, 1000 PEOPLE, 2020-2030



Source: ESA Armstat, 2022

SECTION 1-2: ANALYSIS OF THE SOCIAL CONTEXT

POVERTY, INEQUALITY AND HUMAN DEVELOPMENT

POVERTY RATE | Over the past decade, the poverty headcount ratio in Armenia dropped by an average of 0.9 percentage points per year, from 35.8% in 2010 to 27.0% in 2020 (measured by national poverty line, which stood at 44.500 AMD in 2020). However, the decline was not linear, as the ratio initially declined, bottoming out at 23.5% in 2018, before starting to rise (Figure 1-5).[2]

The situation with poverty was further exacerbated in 2020 by a sharp GDP contraction - 7.6% - as a result of the COVID-19 outbreak and the military conflict in and around Nagorno-Karabakh, which resulted in a sudden influx of 9.000 persons in a refugee-like situation (UNCT, 2021b).

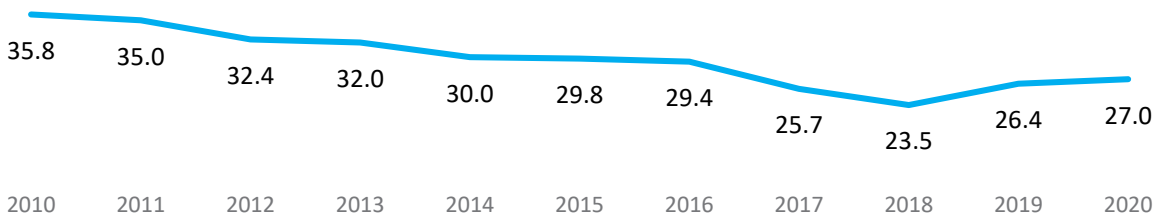
Broken down by type of settlements, in 2020, the poverty rate was significantly higher in rural (33.6%) than in urban settlements (22.5%) (Figure 16). Meanwhile, it stood at 19.9% in Yerevan, against 25.0% in other cities (Armstat, 2021a).

Broken down by the marzes, in 2020, the poverty rate was the highest in Gegharkunik (48.1%) and Shirak (42.9%), whereas it was the lowest in Syunik (6.1%), Kotayk (17.4%), Lori (19.0%), and Yerevan (19.9%) (Armstat, 2021a). Notably, regional poverty rates are closely correlated with wages. In 2020, nominal wages were the highest in Syunik (270.300 AMD) and Yerevan (208.000 AMD), while they were the lowest in Shirak (118.100 AMD) (Armstat, 2021h).

The extreme poverty rate in Armenia was 0.7% in 2020. It was the highest in rural settlements (1.2%), and the lowest in Yerevan (0.2%) (Armstat, 2021a).

[2] The increase was partly driven by a change in methodology of poverty measurement in 2019 (Armstat, 2021a).

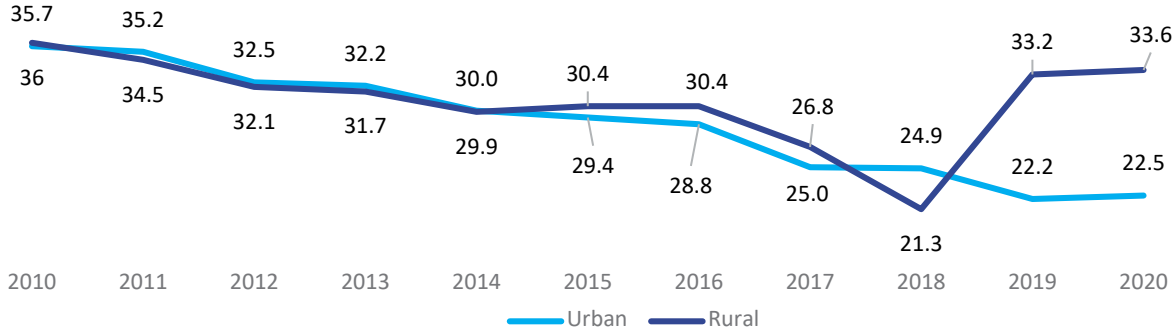
FIGURE 1-5 POVERTY HEADCOUNT RATIO AT NATIONAL POVERTY LINE, % OF POPULATION, 2010-2020



2010-2018 figures are based on the upper poverty line (41,612 AMD in 2017, 42,621 AMD in 2018), while 2019-2020 figures - on the average poverty line (44,048 AMD in 2019, 44,482 AMD in 2020). Due to a change in methodology in 2019, Armstat has significantly raised the upper poverty line (53,043 AMD in 2019, 53,641 AMD in 2020). Thus, for 2019-2020, upper line rates (43.8% in 2019, 47.6% in 2020) are less comparable to previous years than the average line rates presented in this chart.

Source: Armstat, Social Snapshot and Poverty in Armenia, 2010-2020

FIGURE 1-6 POVERTY HEADCOUNT RATIO IN URBAN/RURAL SETTLEMENTS, %, 2010-2020



Methodology was changed in 2019 and the data is not directly comparable between subsequent and prior years

Source: Armstat, Social Snapshot and Poverty in Armenia, 2010-2020

POVERTY GAP AND SEVERITY | The poverty gap index was 4.7% in 2020 against 8.1% in 2010, meaning in 2020, the average consumption of the poor fell 4.7% below the poverty line. The poverty gap index was highest in rural settlements, where it stood at 6.2% in 2020 and lowest in Yerevan at 2.9%.

The poverty severity index was 1.3% in 2020 against 2.5% in 2010, meaning the inequality among the poor had decreased[3]. The poverty severity index was 1.8% in rural settlements and 0.7% in Yerevan.

CHILD POVERTY | Child poverty remains a significant problem, with poverty rates among the highest of all age groups (Table 1-2). In 2020, 33.9% of children were poor (Armstat, 2021a, p. 57), while the poverty rate averaged 25.8% among adults aged 25-64. When considering gender among the children, 34.3% of girls and 33.6% of boys were poor.

Extreme poverty was also more pervasive among children, with a rate of 1.0% against an average of 0.6% among adults aged 25-64. Notably, broken down by gender, the extreme poverty rate was 1.3% for girls and 0.8% for boys.

One of the main policy measures in Armenia to combat poverty in general, and child poverty in particular, is the family allowance. In 2017, 22.7% of households with children under 18 received family allowances (38.1% of poor, 55.3% of extremely poor, and 15.9% of non-poor households) (Armstat, 2017).

> In 2020, one in three children was poor, with child poverty rates among the highest of any age group

[3] Poverty severity index is the squared average of the poverty gap ratio. By squaring each poverty gap data, this measure puts more weight the further a poor's income (consumption) falls below the poverty line

Geographical disparities are marked, with some marzes having nearly twice the rate of the national average. Child poverty was especially pervasive in Shirak (where 57.7% of children were poor in 2020), Gegharkunik (56.0%) and Tavush (46.1%). Meanwhile, the child poverty rate was the lowest in Syunik (9.3%), Kotayk (21.1%), Lori (21.6%) and Yerevan (25.9%) (Armstat, 2021a).

TABLE 1-2 POVERTY HEADCOUNT RATIO BY AGE GROUP, %, 2010-2020

AGE GROUP	POOR							EXTREMELY POOR
	2010	2012	2014	2016	2018	2019*	2020*	2020**
0-5	42.7	38.8	34.4	33.7	31.5	34.7	34.1	0.7
6-9	44.1	38.1	34.0	34.6	29.5	33.4	35.7	1.2
10-14	37.6	30.3	31.6	32.8	27.3	31.8	32.5	0.9
15-17	41.4	36.3	34.8	37.2	27.8	34.9	33.4	1.4
18-24	35.1	34.0	29.4	33.3	25.2	23.2	27.2	1.4
25-64	33.8	30.1	27.8	27.2	21.6	25.2	25.8	0.6
65+	33.4	33.3	31.8	29.2	21.1	21.2	22.3	0.5

*Methodology was changed in 2019 and the data is not directly comparable between subsequent and prior years

**Based on a food poverty line of 23,828 drams

Source: Armstat, Social Snapshot and Poverty in Armenia, 2010-2020

In 2020, among out-of-school children, the main reason not to attend school was the need to work for 2.7% of the poor and 8.4% of the extremely poor children, at the same time, the main reason was the associated high costs for 1.3% of the poor and 12.3% of the extremely poor population (Armstat, 2021a, p. 93). Although public schools are free, there are associated costs, such as appropriate clothing, social events to attend, etc. (household spending per student is discussed in chapter four).

> Among out-of-school children, 4.0% of the poor and 20.7% of the extremely poor do not attend school because of the need to work or due to the related high costs

MULTIDIMENSIONAL CHILD POVERTY | The incidence of poverty is significantly higher for some groups of children. In households with 3 or more children, 40.1% of children were poor in 2017 (against 30.8% among all children).

In female-headed households, 37.0% of children were poor in 2017, while in male-headed households only 28.6% of children were poor (25.5% of all children lived in female-headed households).

In single parent households, the incidence of child poverty (35.8% in 2017) was higher than in households with both parents (29.5%).

The level of child poverty also varies depending on the age of the youngest child in the household. In 2017, in households where the youngest child was 0-5 years old, 33.5% of children were poor, while the rate was 27.7% in households, where the youngest child was 6-14 years old.

POVERTY AND EDUCATION | Broken down by educational attainment, as the level of education rises, poverty rates tend to decrease. In 2020, the poverty rate was 16.6% among people (16 years and over) with higher education and 29.5% among people with upper secondary education. Over the decade, poverty rates declined for all levels of education, with the absolute gap between people with higher and upper secondary education narrowing from 22.2 percentage points (pp) in 2010 to 12.9 pp in 2020 (Table 1-3).

The extreme poverty rate was also the highest among people (16 years and over) with primary education (2.1% in 2020 and 3.4% in 2010) and the lowest among people with higher education (0.1% in 2020 and 0.8% in 2020) (Armstat, 2021a; Armstat, 2011).

TABLE 1-3 POVERTY HEADCOUNT RATIO BY EDUCATIONAL ATTAINMENT (AGED 16 AND OVER), %, 2010-2020

EDUCATION LEVEL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Primary	41.1	46.0	35.2	42.1	42.7	54.4	41.0	31.8	31.6	33.2	32.7
Lower secondary	44.9	42.1	41.5	39.0	36.5	43.5	37.6	33.5	28.5	37.4	34.4
Upper secondary	40.4	38.6	36.5	35.5	33.9	33.4	32.6	29.3	24.8	29.9	29.5
VET	30.8	30.8	29.8	28.6	26.9	24.6	27.1	23.0	20.2	21.0	24.0
Higher	18.2	19.4	17.4	18.5	17.6	15.7	16.8	13.3	14.8	12.1	16.6
Total	34.3	33.2	30.5	30.5	28.8	28.8	28.2	24.5	22.0	24.5	25.3

Methodology was changed in 2019 and the data is not directly comparable between subsequent and prior years

Source: Armstat, Social Snapshot and Poverty in Armenia, 2010-2020

In 2020, among the poor (16 years and over), those with upper secondary education accounted for 47.0%, while those with higher education – 16.7%. Notably among the population aged 16 and over, the share of individuals with upper secondary and higher education was 40.2% and 25.6%, respectively (Armstat, 2021a). The latter once again indicates a trend where increased levels of education show a decrease in poverty levels.

In terms of multidimensional child poverty, the risk of child poverty is lower the higher the educational level of the head of the household in which the child lives. In 2017, in households where the head had a secondary education, 36.9% of children were poor, while in households where the head had a higher education, the child poverty rate was 14.9% (Armstat, 2017).

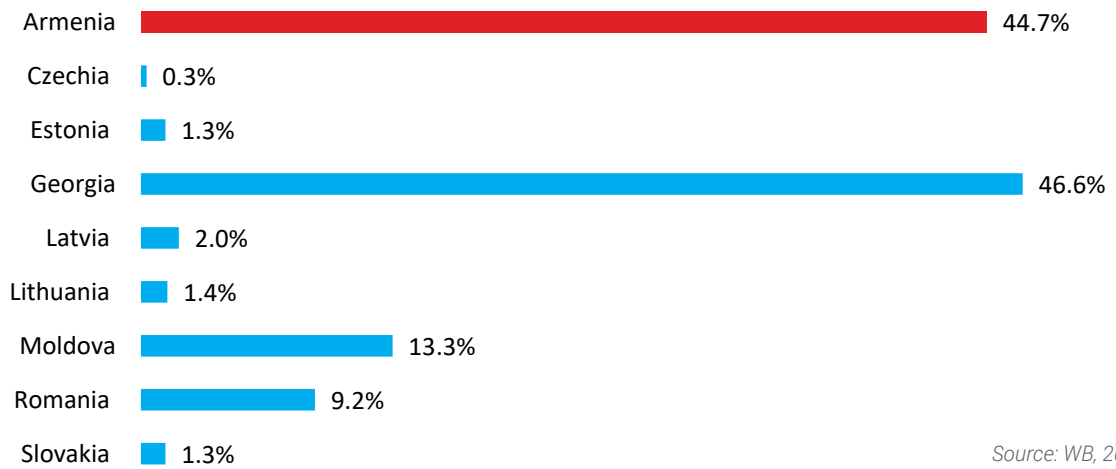
POVERTY AND EMPLOYMENT | One of the principal factors causing poverty in Armenia is a lack of jobs. The latter is evidenced by both large outward migration and high levels of unemployment (Chapter 5 of this report discusses the relationship between education and employment). The primary destination of labor migrants is Russia, and because of Armenia's very high emigration rate, about 30% of the population lives outside the country (OECD/CRRC-Armenia, 2017).

In 2020, households with no one working had a poverty rate of 26.8%, (28% in 2017) while households with two working members had a poverty rate of 23.3% (23.5% in 2017) (Armstat, 2021a; Armstat, 2017). Notably, having two working members does not eradicate poverty.

In terms of multidimensional child poverty, households with no adults working had a child poverty rate of 38.5% in 2017, while households with all adults working had a significantly lower child poverty rate of 25.3% (Armstat, 2017).

POVERTY AT $5.5-A-DAY PPP PER PERSON| According to internationally comparable poverty measures, the poverty headcount ratio at $1.9 a day was 0.4%, and at $3.2 a day was 6.9% in Armenia, in 2020.

FIGURE 1-7 POVERTY HEADCOUNT RATIO AT $5.5 A DAY, 2020 OR LATEST AVAILABLE YEAR



Source: WB, 2022

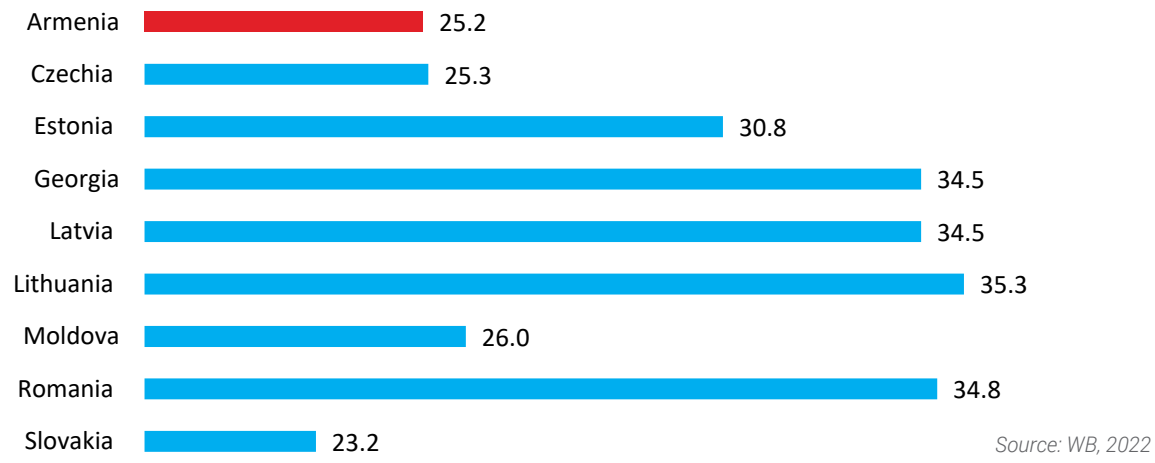
While measured at the upper middle-income economy poverty line - $5.5 a day – the poverty rate was 44.7% in 2020. Meanwhile, the poverty gap at $5.5 a day stood at 11.0% in 2020 (WB, 2022).

The poverty rate in Armenia at $5.5 a day was comparable to Georgia (46.6%), but much higher when compared to Moldova (13.3%), while compared to most benchmark countries, it was at least twenty times higher (Figure 1-7).

INCOME INEQUALITY | The Gini index, which measures the extent to which the income distribution deviates from a perfectly equal distribution, in Armenia stood at 25.2% in 2020, which was about the same level as in Moldova, but significantly better than in Georgia.

Moreover, the Gini index in Armenia was significantly lower than in most benchmark countries, implying a more equitable distribution of income (although not high) (Figure 1-8).

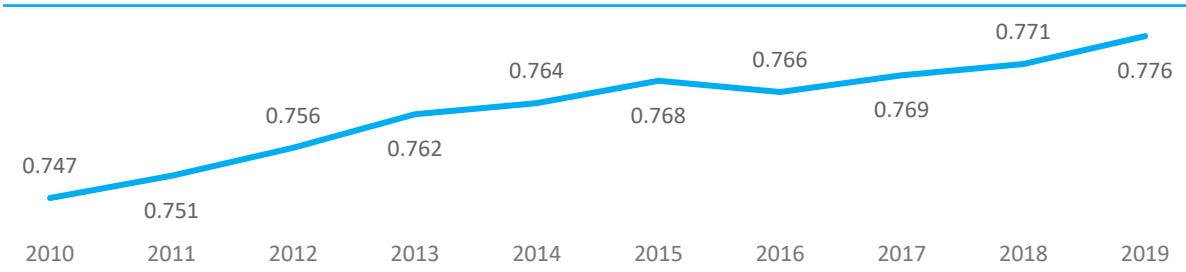
FIGURE 1-8 GINI INDEX, 2020 OR LATEST AVAILABLE YEAR



Source: WB, 2022

In terms of dynamics over time, the Gini index in Armenia in 2020 was below the average for 2010-2020, which was 30.8% (WB, 2022). In Armenia, consumption inequality is much lower than income inequality, with the Gini index for consumption is at least 10 percentage points lower than one for income (Armstat, 2021a).

FIGURE 1-9 HUMAN DEVELOPMENT INDEX IN ARMENIA, 2010-2019



Source: UNDP, 2022

HUMAN DEVELOPMENT INDEX | The decline in poverty rate has paralleled with the improvements in the Human Development Index in Armenia (Figure 1-9), which is a composite measure of life expectancy, knowledge, and a decent standard of living.

In 2010-2019, life expectancy increased from 73.3 to 75.1 years; mean years of schooling increased from 11.1 to 11.3 years, expected years of schooling remained unchanged at 13.1 years[4];

[4] Mean years of schooling indicates the current schooling level of the population, while expected years of schooling indicates the future schooling level

and gross national income (GNI) per capita increased from $9,753 to $13,894 (UNDP, 2022).

According to the Human Development Index (HDI), Armenia ranked 81st among 189 countries in 2019, down from 72nd a year earlier, deteriorating by 9 positions over a year. Notably, GNI per capita rank minus HDI rank was positive and equal to 9 in 2019, meaning Armenia was better ranked by HDI than by GNI.

HUMAN CAPITAL INDEX | Armenia ranked 82nd in 2020 (among 174 countries) by WB's Human Capital Index (HCI) (WB, 2022b). The HCI measures the amount of human capital that a child born today can expect to attain by age 18.

According to the WB estimation, a child born in Armenia today will be 58% as productive when she grows up as she could be if she enjoyed complete education and full health (the worldwide average is 56%) (WB, 2020). Thus, in Armenia, over two-fifths of a child's potential is lost because of insufficient education and poor health.

> In Armenia, more than two-fifths of a child's productivity potential is lost due to insufficient education and poor health
>
> Factoring in what children actually learn, expected years of school in Armenia is only 8 years

In 2020, the HCI was 57% in Georgia, 58% in Moldova, 71% in Latvia, 75% in Czechia, 63% in Albania, and 77% in Slovenia (WB, 2022b).

Although expected years of schooling in Armenia were 11.3 in 2020, factoring in what children actually learn, actual learning-adjusted years of schooling were just 8 years (WB, 2020).

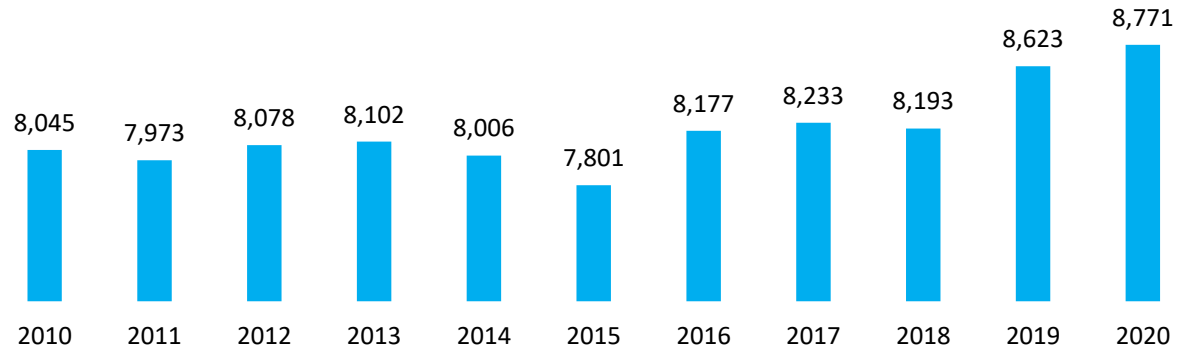
CHILD DISABILITY

Children with disabilities are generally more likely to be out of school and, for those in school, less likely to have the opportunity to learn compared with their peers (Malik, Raza, Rose, & SIngal, 2020). Among other issues, the need for children with disabilities to access requires adjustments in the infrastructural features of school and preschool institutions.

Typically, a lack of resources for children with disabilities and a lack of access to both the environment and learning materials are issues that affect the educational opportunities of children with disabilities.

In Armenia, there were 8,771 children with registered disability status in 2020, 9% higher than in 2010. It is noteworthy that the registered cases did not change much in 2010-2018, but increased sharply in 2019 (Figure 110). This increase was primarily due to procedural changes in the disability assessment and registration process, as well as improvements in the identification process, referral from the health sector, increased awareness of families not to avoid applying for a disability determination, increased awareness of childhood disabilities, and the establishment of a pediatric, medical, and social expert committee.

FIGURE 1-10 NUMBER OF CHILDREN WITH REGISTERED DISABILITY STATUS UNDER THE AGE OF 18, 2010-2020



Source: Armstat, 2021d

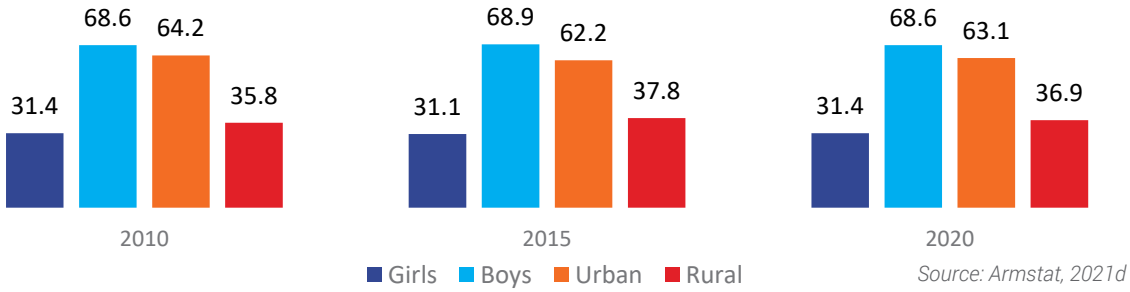
In 2010-2020, the proportion of children with registered disability status in the population under 18 ranged from 1.1% to 1.2% in Armenia, with the highest level recorded in 2020. According to recent global estimates, one in ten children worldwide has a disability, with 6% in Europe and Central Asia, 10% in North America, and 13% in the Middle East. In parallel, the percentage of children aged 2-17 with one or more functional difficulties is 9% in Georgia, 4% in Belarus, 6% in Montenegro, 7% in Kyrgyzstan (no comparable data for Armenia) (UNICEF, 2021c).

> Children with registered disability status accounted for 1.2% of under 18 population in 2020 in Armenia

Thus, a significant number of disability cases may remain unregistered in Armenia, and the real figures may be higher (according to Global Burden of Disease 2004 data, among children aged 0-14 years, 5.1% had moderate or severe disabilities, while 0.7% experienced severe disabilities (WHO, 2011)).

In Armenia, two out of three children with a registered disability status are boys (68.5% in 2010-2020) (Figure 111). In most countries, no statistically significant differences are found in the proportion of boys and girls with disabilities. However, in places where a significant difference is found, the proportion of boys is greater than the proportion of girls (UNICEF, 2021c).

FIGURE 1-11 CHILDREN WITH DISABILITY STATUS BY GENDER AND TYPE OF SETTLEMENT, % OF TOTAL, 2010-2020



Source: Armstat, 2021d

The state policy in Armenia is to ensure the full inclusion of persons with disabilities in public life. The 2021 Law on the Rights of Persons with Disabilities establishes provisions concerning the requirements for the accessibility of the physical environment for persons with disabilities. The law also emphasizes social inclusion and defines accessibility in a broader sense, including access to the physical environment, transport, information and communications, information and communication technologies and systems, as well as public institutions and services, with the aim of ensuring the independence of persons with disabilities and their full participation in all spheres of life.

> The two leading causes of disabilities among children are diseases of the nervous system and mental and behavioral disorders

In addition, together with the Law on the Assessment of the Functional Capabilities of a Person, Armenian legislation is moving from a "medical" model of disability to a bio-psycho-social or human-rights model, according to which disability is considered a phenomenon (situation) arising from the interaction of a person (with a health problem) and environmental barriers (including attitudes) that impede the full and effective participation of a person in public life on an equal basis.

In 2020, in Armenia, the two leading causes of disabilities among children were diseases of the nervous system (23.9% of all registered cases of child disabilities) and mental and behavioral disorders (28.4%) (Armstat, 2021d). A high proportion of children with mental behavior disorders is an important factor affecting the efficiency of the education process (Gov.UK, 2018). In Armenia, the number of children with mental and behavioral disorders leading to disabilities is on the rise, with the absolute number increasing 72% in 2010-2020. At the same time, the proportion of children with mental and behavioral disorders among children with disabilities - 28.4% in 2020

- was 10.4 percentage points higher than in 2010 (Armstat, 2011; Armstat, 2021d).

According to UNFPA, the mental health of youth (16-24 years old) has been significantly affected by the double shocks of the COVID-19 pandemic and the conflict in and around Nagorno-Karabakh, with 76% reporting anxiety and 21% having moderate and 2% severe symptoms of depression. In parallel, 88% of youth reported that they spend their free time online. UNFPA concluded that the data raised concerns about adolescent mental health and online safety (UNICEF, 2021d).

For children with disabilities, problems arise with access to education, organization of the educational process, and in receiving home education. The more severe the child's disability, the higher the risk of not attending school. In general, children with disabilities have limited opportunities to be involved in social processes and are more likely to be out of school. (UNICEF, 2021b). Additionally, a lower percentage of children with disabilities attend early childhood education than their peers without disabilities, and this disparity is more pronounced among girls (UNICEF, 2021c).

In 2020, among out-of-school children, the leading causes were disabilities or illness in 0.7% of non-poor, 0.9% of poor and 3.9% of extremely poor children (Armstat, 2021a).

CHILD HEALTH AND MALNUTRITION

This subsection discusses the incidence of diseases among children, the prevalence of child malnutrition, and related issues in Armenia.

Health and education are closely related to each other. Education predisposes a person to better health outcomes, since educated individuals are more inclined to live a healthy lifestyle and use preventive medical care; they are more likely to detect symptoms of illness in a timely manner and seek appropriate medical care. Health also has a significant impact on labor productivity. Good health increases life expectancy, and healthy people are more productive and achieve better results (Raghupathi & Raghupathi, 2020; Cutler & Lleras-Muney, 2006; Hahn & Truman, 2015).

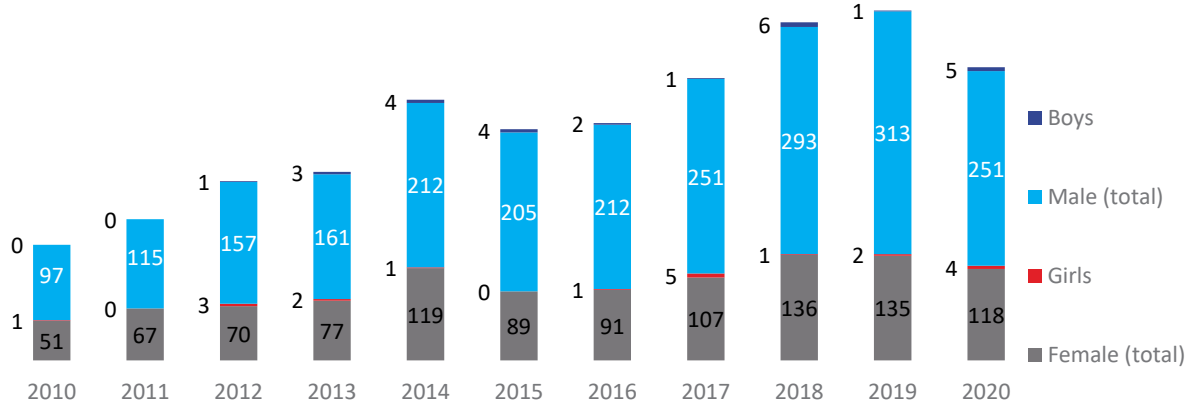
INCIDENCE OF HIV/AIDS AMONG CHILDREN | HIV/AIDS is not a major public health problem in Armenia. Nevertheless, new cases of HIV infection have been on the rise in 2010-2020, and the number of new cases in 2020 was 2.5 times higher than in 2010. Males accounted for about two-thirds of all cases (Figure 112).

During 2010-2020, 47 new cases of HIV infection were registered among children. In 2020, although the number of new HIV cases among the general population decreased by 17.6% compared to the previous year, the largest number of HIV infections was registered among children (19.1% of all cases in 2010-2020).

In 2010-2020, the incidence of AIDS tended to increase, though the absolute number remains low (Annex 2.1 Table 1). The proportion of women among AIDS patients is relatively small - on average, only 26.3%. In a regional breakdown, 29.1% of all AIDS cases (registered in 2010-2020) were in Yerevan, 11.3% in Shirak, and 9.8% in Lori.

> HIV, AIDS, and malaria are not a serious public health problem in Armenia in general, and among children in particular

FIGURE 1-12 NEW REGISTERED CASES OF HIV INFECTION BY GENDER, 2010-2020



Source: Armstat, 2021d

INCIDENCE OF MALARIA AMONG CHILDREN | Another global health problem, malaria, is currently not a major issue in Armenia. In 2020, only 3 cases were detected, of which one in a child (Armstat, 2021d). In 1994-2005, outbreaks of malaria were registered in Armenia, but in 2006, the local transmission of the disease was interrupted, and nowadays only imported cases of the disease are revealed occasionally. In 2011, the Republic of Armenia was certified by the World Health Organization (WHO) as a malaria-free territory (MoE, 2020).

RESPIRATORY AND INFECTIOUS DISEASES IN CHILDREN | Respiratory organ and infectious diseases continue to be a major disruption in the educational process, especially in pre-primary and primary education (UNICEF, 2022b). Studies have shown that health education programs for primary, middle, and high school students have a positive effect on knowledge and behavior in the prevention of respiratory infections (Wang & Fang, 2020; Berendes, Andujar, Barrios, & Hill, 2019; Mutalik & Raje, 2017).

In 2018-2020, respiratory organ diseases accounted for 53.4% of all first time diagnosed diseases among children under 15 years of age; meanwhile, infectious and parasitic diseases (including those due to COVID-19 in 2020) accounted for 10.2% (Armstat, 2021d).

Before the COVID-19 pandemic, during 2018-2019, the incidence of respiratory diseases (per 100.000 population) among children under 15 was 3.5 times higher compared to the rest of the population, whereas the incidence of infectious and parasitic diseases was 3 times higher (Table 1-4).

TABLE 1-4 MORBIDITY WITH FIRST TIME CONFIRMED DIAGNOSIS, PEOPLE, 2018-2020

DISEASES	2018			2019			2020		
	15+	Under 15		15+	Under 15		15+	Under 15	
	P/100K*	P/100K*	Total	P/100K*	P/100K*	Total	P/100K*	P/100K*	Total
Infectious & parasitic dis.	1,709	5,002	30,004	1,765	5,421	32,512	7,817	4,267	25,560
Respiratory organ dis.	7,798	26,786	160,686	7,756	27,615	165,633	9,385	22,250	133,277
Total	26,645	49,787	298,673	27,703	51,138	306,725	33,153	42,346	253,652

*Per 100.000 population

Source: Armstat, Social Situation of RA

In 2020, during the COVID-19 pandemic, diagnosed cases of respiratory organ and infectious diseases among children under 15 declined by almost one-fifth, but the incidence of respiratory organ diseases among children was still 2.4 times higher (Table 1-4). The decline in diagnosed cases of respiratory and infectious diseases appears to be partly due to the closure of schools and the cessation of disease transmission among schoolchildren.

CHILD IMMUNIZATION | Vaccination is one of the most cost-effective ways to protect children from life-threatening diseases. In 2019, the WHO named vaccine hesitancy (defined as the reluctance to vaccinate despite the availability of vaccines) as one of the top ten public health threats, along with diseases such as pandemic flu, Ebola, and HIV (WHO, 2019). The WHO Vaccine Advisory Group has identified complacency, inconvenience in accessing vaccines, and lack of confidence as the key reasons behind hesitancy (SAGE, 2014). Vaccine hesitancy is a significant problem in Armenia, as well (Badalyan & Hovhannisyan, 2021).

> One in ten children under 3 is not vaccinated in Armenia. Moreover, the level of vaccination of children in urban areas is lower than in rural areas

In Armenia, 9 out of 10 children aged 2-3 years have received all the essential vaccines recom-

mended by WHO, including BCG (officially reported coverage in 2021 - 99%), three doses of diphtheria-tetanus-pertussis (91%), three doses of polio (86%) and at least one dose of measles-mumps-rubella (94%). Most children received the vaccines at the right age (Ulikhanyan, 2018b; WHO, 2022b).

Thus, 1 in 10 children under 3 years of age is not vaccinated. The level of vaccination of children in rural areas is higher than in urban areas. In urban areas, children aged 2-3 received only 86% of the required vaccines in 2017, while those in rural areas received 93% (Ulikhanyan, 2018b).

A study based on Demographic and Health Survey (DHS) data showed that despite officially reported coverage close to 95%, actual measles vaccination coverage among children under 3 years of age in Armenia was only 79.6% in 2016. The study also found that children were more likely to be vaccinated if their mothers had a secondary (as opposed to basic or tertiary) education and attended postnatal care within two months of birth (Kantner, Herzig, & Olsson, 2021).

CHILD MALNUTRITION | Malnutrition, affecting the mental development of children, increases the risk of morbidity and mortality (UNICEF, 2019b).

According to a survey commissioned by the World Food Programme (WFP), 21.4% of households in Armenia were food insecure in 2021. An additional 56.4% of households were marginally food secure, suggesting they were at risk of food insecurity in the event of a major shock. Only 45.1% of children aged 6-23 months received a diet that met the minimum requirements. In 2021, the most food-insecure regions of Armenia were Tavush (31% of households), Lori (29%), Shirak (28%), and Gegharkunik (26%), while regional cities and rural areas were more food insecure compared to Yerevan (WFP, 2021).

> 21.4% of households in Armenia were food insecure in 2021, while more than half of children aged 6-23 months did not receive a diet that met the minimum requirements

Since 2012, WFP has implemented a school meal program, at one point providing school meals to over 100.000 school children once per school day. Starting in 2017, the school meal program has been gradually transferred to the Armenian government, and the transition is scheduled to be completed in 2023. As of 2019, the program was implemented in 412 public educational institutions of Armavir, Gegharkunik, Kotayk, Lori and Aragatsotn marzes, with meals provided to about 50.000 students in grades 1 to 4 (MoESCS, 2020b). WFP estimates, that for every dollar invested in Armenia's school meal program, there is a $7.1 return in the form of improved health and education among school children and increased professional productivity over their lifetime (WFP, 2021b).

CHILD NUTRITIONAL PROBLEMS | The key indicators in assessing nutritional problems in infants and young children (under 5 years of age) are stunting, overweight, underweight and wasting.

According to UNICEF-WHO-WB child malnutrition estimates (UNICEF-WHO-WB, 2022), stunting prevalence among under-5 children in Armenia was 9.1% in 2020 (Georgia – 5.7%, Moldova – 4.9%, Czechia – 2.5%, height-for-age more than two standard deviations (>2 SD) below the median).

Overweight prevalence among under-5 children in Armenia was 10.8% in 2020 (Georgia – 7.6%, Moldova – 4.3%, Czechia – 6.6%, weight-for-height >2 SD above the median).

Underweight prevalence among under-5 children in Armenia was 2.6% in 2016 (Georgia – 2.1% (2018), Moldova – 2.2% (2012), Czechia – 2.1% (2001), weight-for-age >2 SD below the median).

Wasting prevalence among under-5 children in Armenia was 4.4% in 2016 (Georgia – 0.8% (2018), Moldova – 1.9% (2012), Czechia – 4.6% (2001), weight-for-height >2 SD below the median) (UNICEF-WHO-WB, 2022).

The key indicators in assessing nutritional problems of adolescents are thinness, overweight and obesity.

According to WHO data (WHO, 2022), the prevalence of thinness among adolescents aged 10-19 in Armenia was 2.1% in 2016 (Georgia – 2.7%, Moldova – 2.7%, Czechia – 1.8%, body mass index >2 SD below the median).

Overweight among adolescents is becoming more common. The prevalence of overweight among adolescents aged 10-19 in Armenia was 18.3% in 2016 (Georgia – 19.0%, Moldova – 16.5%, Czechia – 25.9%, body mass index >1 SD above the median).

Obesity among adolescents is more prevalent than thinness, accounting for 3.8% in 2016 among adolescents aged 10-19 in Armenia (Georgia – 5.7%, Moldova – 3.3%, Czechia – 8.1%, body mass index >2 SD above the median) (WHO, 2022).

ADOLESCENT SMOKING AND ALCOHOL USE | Another health problem is the use of tobacco, alcohol, and cannabis by adolescents.

According to WHO data, in Armenia, the prevalence of smoking among male adolescents aged 13-15 was 11.5% in 2018 (Moldova – 9.0%, Albania – 12%, Latvia – 14.7%, Belarus – 7.2%). Meanwhile, the prevalence of drinking among male adolescents aged 15-19 was 23.5% in 2016 (Georgia – 33.0%, Moldova – 66.6%, Czechia – 77.1%) (WHO, 2022).

According to the results of the 2017/19 national study, among 17-year-olds, 8.0% of boys and 3.5% of girls "have ever smoked for 1-2 days", while 5.0% of boys and 1.0% of girls have smoked during the 30 days preceding the study (HBSC, 2019).

Among 17-year-olds, 26.0% of boys and 20.0% of girls have consumed alcohol during the 30 days preceding the study (HBSC, 2019).

During the 30 days preceding the study, 3.0% of 15-year-old boys and 5.0% of 17-year-old boys used cannabis (HBSC, 2019).

Child health issues related to the COVID-19 pandemic are discussed in the next section.

SECTION 1-3: ANALYSIS OF THE HUMANITARIAN CONTEXT

EXPOSURE TO SEISMIC RISK AND SECONDARY HAZARDS

Armenia faces a high risk of natural disasters and is ranked 82nd out of 191 countries[5] in terms of exposure to natural hazards in the Inform Risk Index 2021 (European Commission, 2022).

Among the major risks faced by Armenia are: earthquakes, droughts, floods, landslides, mudslides, forest fires, and hailstorms (MoE, 2020). In 2005, a WB study listed Armenia among the 60 countries most exposed to multiple hazards (Dilley, Chen, Deichmann, Lerner-Lam, & Arnold, 2005). Overall, over 80% of the Armenian population is at risk of exposure to catastrophic events (Pusch, 2004).

> More than half of schools in Armenia, where two-thirds of schoolchildren study, are subject to high seismic risk

Geographically, Armenia is peculiar for its high seismic and exogamic processes, which provoke earthquakes, landslides, and erosion. Hydro meteorological disasters have become more frequent and intense in the last few decades. Floods, mudslides, and debris flows threaten half of the country's territory, mainly in medium-altitude mountainous areas, where they typically occur once every three to ten years. About 15% of agricultural lands in Armenia are prone to droughts, worsening the situation with the erosion and salinity of lands (Global Facility for Disaster Reduction and Recovery, 2009).

A 2004 UNDP report noted that during the 1980-2000 period, Armenia ranked first in the world for relative vulnerability to earthquakes, with the number of people killed per million exposed standing at 7,653[6] (UNDP, 2004). Yerevan, where 37% of the total population lives, is in one of the highest seismic risk areas. An analysis of Yerevan building stock revealed that an earthquake with a magnitude of 7.0 or greater would destroy most buildings, potentially killing some 300,000 people (Global Facility for Disaster Reduction and Recovery, 2009).

There were 1,402 primary and secondary schools in Armenia as of 2020. Most of school buildings were built before the devastating Spitak earthquake, and they do not conform to the modern requirements of seismically resistant construction. In 2013, with the support of UNICEF Armenia, a project was implemented on preventing disaster losses and reducing vulnerability of children in Armenia, based on which a school seismic safety database was developed (Khlghatyan, Margaryan, Namalyan, & Tovmasyan, 2018). Later, the Government adopted a program for the improve-

[5] The most at-risk country is ranked 1st

[6] The most devastating earthquake in Armenia occurred in 1988, which killed 25.000 people and injured more than 15.000, about 517.000 people lost their homes

ment of the seismic safety in public schools of Armenia in 2015-2030 (MoES, 2022).

Overall, dozens of earthquakes occur in Armenia every year, which, even if not directly destructive, weaken the buildings, creating potential problems for years to come. In 2018-2020, 120 earthquakes were registered in Armenia (Armstat, 2022a).

More than half of Armenia's schools - 54.9%, and two-thirds of schoolchildren - 66.6%, are subject to high seismic risk. In Yerevan, all schools are in the highest danger zone (Table 1-5).

TABLE 1-5 EXPOSURE OF SCHOOLS TO SEISMIC RISK, 2021

SEISMIC RISK LEVEL	Schools		Pupils		Schools		
	Number	%	Number	%	Yerevan	Marz, urban	Marz, rural
Low (1st zone)	158	11.3%	29,207	7.2%	0	47	111
Moderate (2nd zone)	475	33.9%	106,077	26.2%	0	95	380
High (3rd zone)	769	54.9%	269,861	66.6%	252	149	368
Total	**1,402**	**100%**	**405,145**	**100.0%**	**252**	**291**	**859**

Source: ESA based on Seismic Service and MoTAI assessments

The proportion of schools exposed to high risk of secondary hazards is quite low at only 0.9% (Table 1-6). Simultaneously, 13.3% of schools are exposed to a moderate risk of secondary hazards. Secondary hazards refer to landslides, floods, mudslides and proximity to nuclear power plant.

The landslide is a widespread hazard in Armenia and the territory is prone to highly active landslide processes. One third of the country's territory is in landslide-prone areas, which are mainly in mountain foot and mountainous territories. Around 470.000 people, or about 15% of the total population, are affected by landslides, and the annual damage from landslides was estimated at around $10M in 2017 (Government, 2017).

TABLE 1- 6 EXPOSURE OF SCHOOLS TO SECONDARY HAZARDS

SECONDARY hazard risk level	Share of schools, %
Absence or low level of risk	85.9%
Moderate risk	13.3%
High risk	0.9%
Total	**100.0%**

Source: ESA based on Seismic Service and MoTAI assessments

In 2010, 19 cases of landslide activation were registered in the country, nine of which were in Tavush and six in Lori. In 2018-2020, 16 landslides were recorded (Armstat, 2022a). In total, over 2,500 landslide-prone sites were identified in Armenia, with a total area comprising around 4.1% of the total territory of the country (MoE, 2020).

The number of strong and very strong droughts during the period of 2000-2017 increased by 33 days relative to the baseline average for 1961-1990. Drought assessment results show that in recent years, the upper boundary of the drought zone has expanded to include mountainous areas, and droughts start earlier. Droughts are observed in the lower regions of Armenia almost every year, and in the foothill regions have a near 50% recurrence rate of droughts (MoE, 2020).

Overall, among the climate change induced hydrometeorological hazards, the hailstorms, frosts, heat waves, and droughts have the biggest impact on the loss of agricultural crop yields

(MoE, 2020).

The risk of technological disasters is also significant. There are about 20 chemical plants in Armenia that use ammonia, chlorine, chloric acid, nitric acid, etc., and it is estimated that about 1,500 plants are at risk of explosion. Furthermore, Armenia has 82 water reservoirs, 24 tailings reservoirs, and a nuclear power plant in a seismically active zone (Krausmann, Girgin, & Heraty Wood, 2016).

In total, 70 schools are located within a radius of 50 km from the Metsamor nuclear power plant, mainly in Yerevan and Armavir. The list of schools is provided in the Annex 1.2.

> Seventy schools are located within a radius of 50 km from the Metsamor nuclear power plant

The high level of urbanization, particularly in Yerevan, where 37% of the population of Armenia lives, is the reason for the concentration and intensification of disaster risks (particularly seismic). According to a 2007 estimate, there is a 20% chance that a major catastrophe will result in a loss of 12.7% of GDP in any given year (Gupta, 2009).

The key document for disaster risk management is the government decision on developing disaster risk management plans for regions, communities and organizations. The plans should include a disaster general description, disaster risk management and reduction, emergency response organization and implementation (MoES, 2019).

COVID-19 IMPACT ON THE EDUCATION SYSTEM

The COVID-19 pandemic has had a severe impact on the education system.

School closures during the lockdown forced teaching to move online. Only 80% of school-age children were attending online classes in March-June 2020. The 2020-2021 academic year started with a mix of distance and on-site education. Only around 15% of children under the age of six were attending preschools in 2020 (UNICEF, 2020c).

Limited participation in online classes was due to a lack of access to technology and the Internet, especially in rural communities. There were issues also with the insufficient readiness of teachers to conduct online courses, limited administrative capacity of educational institutions, as well as potential health problems caused by the epidemic. The situation prompted the MoESCS to adopt a norm regulating distance education in the country (MoESCS, 2020), but it was not developed inclusively and did not fully take into account the specifics of the realization of the right to education of children with special educational needs.

> During the pandemic, school-age children in 13.8% of households did not attend online classes, 88% of them due to lack of technical means

Many students in rural schools did not have equipment and access to the Internet. This problem has reduced the quality of the educational process and communication between students and teachers in rural communities. Additionally, there were no criteria for evaluating the students' online progress.

At the beginning of the crisis, teachers were not ready for online lessons. In 2020, over 7,000 teachers were trained on different platforms, and three online courses were developed to introduce the basic technological tools and pedagogical skills. The trainings were organized by the joint efforts of UNICEF and the National Center for Educational Technologies (MoESCS, 2021).

Because of the underfunding of educational and technological infrastructure before the outburst of COVID19 and the lack of digital literacy among teachers, Armenia struggled to sustain an effective educational experience for school children. The emergency exacerbated the situation of disadvantaged pupils who had already been marginalized due to socioeconomic and geo-political conditions (Bunescu & Robinson Canham, 2021).

A World Vision Armenia survey conducted among extremely poor and vulnerable families, found that in 13.8% of households, school-age children did not attend online classes, of which 88% due to a lack of technical equipment, and 78.7% due to absence of Internet connection. During the pandemic, in 28.6% of households with school-age children with disabilities, children did not attend online classes. In 55.1% of cases, Individual Educational Plan (IEP) was not followed as compiled prior to the lockdown. Moreover, in 77.6% of

cases, the IEP's objectives had not been revised during the COVID-19 pandemic period. This suggests that online classes have not been adapted to deliver online lessons effectively and access for children with disabilities has been severely limited. Overall, 41.8% of respondents rated the quality of the distance learning process during the COVID-19 pandemic as poor or very poor. (World Vision Armenia, 2020).

Another UNICEF report constitutes that the digital divide revealed during the pandemic reflects gaps in equity for Armenia's most disadvantaged population. Schoolchildren from low-income families, those residing in rural areas, and children with special educational needs and disabilities (SEND) were the most affected. Given existing pre-COVID-19 gaps in educational outcomes for these schoolchildren, the report predicts that learning loss for these groups will be severe. The report states that in 2021, 45% of students failed the math test and 35% failed the Armenian language test, although the disruptions due to COVID-19 are only partially to blame for these results (UNICEF, 2022c).

> In 2020, there was only one computer per 17.1 students in general education schools in Armenia.

The UNICEF report asserts that the most obvious among the pre-existing equity gaps in education was the technology gap. The widening digital divide, primarily in relation to physical access to technology and the Internet, was particularly acute for students from less privileged backgrounds. Disparities in access to technology and learning resources was most severe for students in rural areas, who faced connectivity issues; for students in socio-economically disadvantaged households, for whom health and nutritional needs were paramount; and for students in multi-member families who did not have access to enough devices. The UNICEF report concludes that the learning and special care needs of the children with SEND were not properly addressed (UNICEF, 2022c).

The availability of computers and the Internet was a significant factor in the smooth organization of the educational process during the pandemic. In 2020, there was only one computer per 17.1 students in general education schools in Armenia (Armstat, 2021d). In 2021, the same indicator was 17.0 students per computer (EMIS, 2022).

For benchmarking purposes, the number of computers per 15-year-old student in Armenia was 1.0 in 2020 (0.9 in 2021) (EMIS, 2022), while the same indicator in 2018 was 0.8 in Organization for Economic Cooperation and Development (OECD) countries, 0.4 in Georgia, 0.5 in Moldova, 1.0 in Lithuania, 0.7 in Slovenia (OECD, 2020).

Thus, nominally, Armenia is in a good position compared to the OECD average, but 27.4% of school computers in Armenia are out of order, while 52.8% of operating computers are Pentium 4 or older (Government, 2022b).

In 2020, only 63.1% of urban and 50.8% of rural households had at least one member with access to a computer. And only 80.1% of urban and 71.5% of rural households had at least one member with access to Internet (Armstat, 2021a).

NAGORNO-KARABAKH CONFLICT IMPACT ON THE EDUCATION SYSTEM

Because of the conflict in and around Nagorno-Karabakh in 2020, about 90,000 people were forced to leave their homes in Nagorno-Karabakh, of which almost 40% were children. This has negatively affected the children's right to education.

More than 50.000 people have returned to Nagorno-Karabakh since the November 9 ceasefire agreement, but many of those from the occupied regions continue to live in Armenia (as of June 2021, 37.000 people remained in a refugee-like situation in Armenia (UNCT, 2021b)).

> As a result of the conflict, 107 schools came under the control of Azerbaijan. Less than 18,000 schoolchildren out of 24,000 who studied before the 2020 conflict are currently studying in Nagorno-Karabakh.

The conflict in and around Nagorno-Karabakh has created additional gaps in learning. It seriously affected two main groups of children: those displaced from Nagorno-Karabakh - who did not return after the conflict and currently reside in Armenia, and schoolchildren living in the border villages of Armenia (UNICEF, 2020c).

The Government of Armenia, at both the national and local levels, has provided critical support to

displaced people, including space in communal shelters and 18 different cash assistance programs (UNCT, 2021b).

In October-November 2020 and January-March 2021, UNICEF and its partners provided individual education kits to 5,100 children temporarily residing in shelters or private households in Armenia. UNICEF also provided 500 tablets to host schools to support children who were distance-learning due to the COVID19 pandemic (UNICEF, 2020b; UNCT, 2021).

Weaknesses have been revealed in the coordination of the institutional approach towards displaced children from Nagorno-Karabakh to Armenia. In October 2020, when the first wave of displaced people from Nagorno-Karabakh arrived at the reception centers, access to education was interrupted as all age groups were having non-formal classes together - usually just one class a day. Another significant problem was the lack of technical equipment and access to the Internet. Upon the request of the MoESCS, reception centers were obliged to send the children to schools, but transportation was an obstacle in certain areas where the centers were outside the cities, and children remained out-of-school (Baldryan & Gogueva, 2021).

As of the end of 2021, access to education for displaced children had stabilized as formal education was available to 80% of the displaced population close to their place of residence. Notably, about 94% of displaced households had school-aged children attending formal education programs (UNCT, 2021b).

For the children in the border villages of Armenia with Azerbaijan, particularly in Syunik and Tavush, border incidents have increased drastically. This severely hinders access to quality education, including early childhood development and learning (Government, UN Armenia, 2021).

Some villages in Syunik were cut off from the regional centers due to the control of the Azerbaijani armed forces over the roads connecting the villages with the regional centers. Previously, these schools had visiting teachers from neighboring cities. These teachers were facing difficulties getting to their workplace without secure transportation services.

Overall, at least 31 schools (with 4,548 students and 516 teachers, mostly in Tavush) (EMIS, 2022) are in close proximity to the Armenian-Azerbaijani border and have either been shelled or are at constant risk of being shelled by Azerbaijani forces.

In total, as a result of the conflict escalation in 2020, 107 schools came under the control of Azerbaijan, in which 8,155 children studied (Armenpress, 2021). Because of the conflict, 6,800 students were displaced. As of now, less than 18.000 children out of 24.000 schoolchildren (Stat-NKR, 2020) who studied before the conflict escalation in 2020 are studying in Nagorno-Karabakh .

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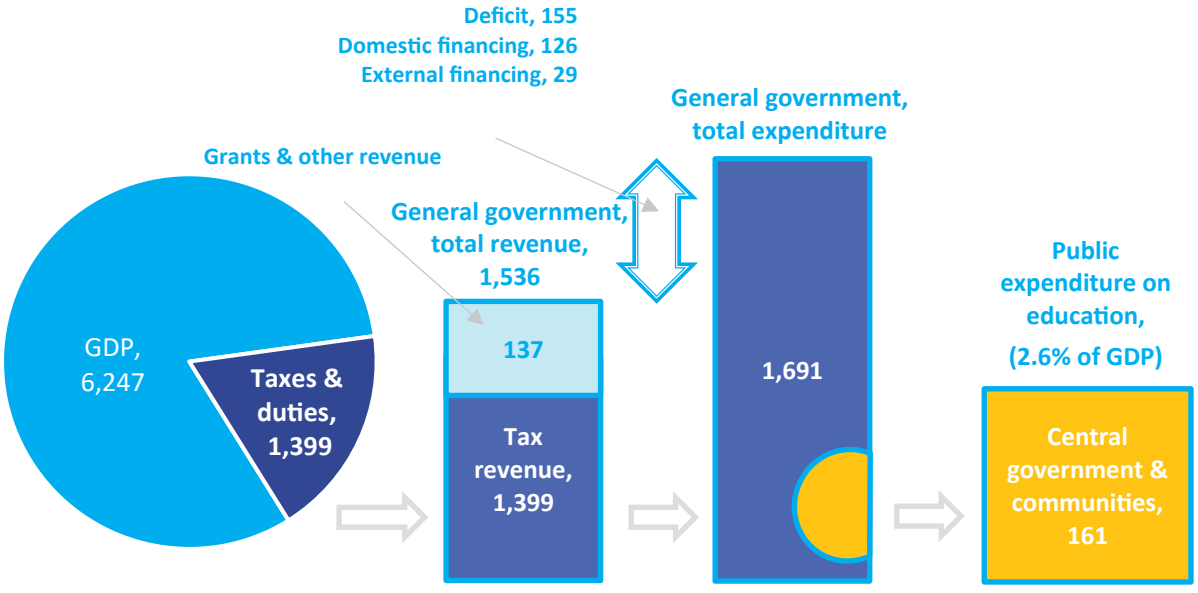
CHAPTER 2:

ANALYSIS OF PUBLIC EXPENDITURE ON SCHOOL (PRESCHOOL) EDUCATION, MACRO-ECONOMIC AND PUBLIC FINANCE CONTEXT AFFECTING THE EDUCATION SECTOR

SECTION 2-1: MACROECONOMIC AND PUBLIC FINANCE CONTEXTS

In this section, the analysis is structured around the relationship between Armenia's GDP and expenditure on education. Figure 2-1 schematically depicts this relationship for 2018-2020. Thus, the central government and communities annually spent 161B AMD on education in 2018-2020, which averaged 2.6% of the GDP.

FIGURE 2-1 RELATIONSHIP BETWEEN GDP AND PUBLIC EXPENDITURES ON EDUCATION, B AMD, 2018-2020



Source: ESA, Armstat, 2021b

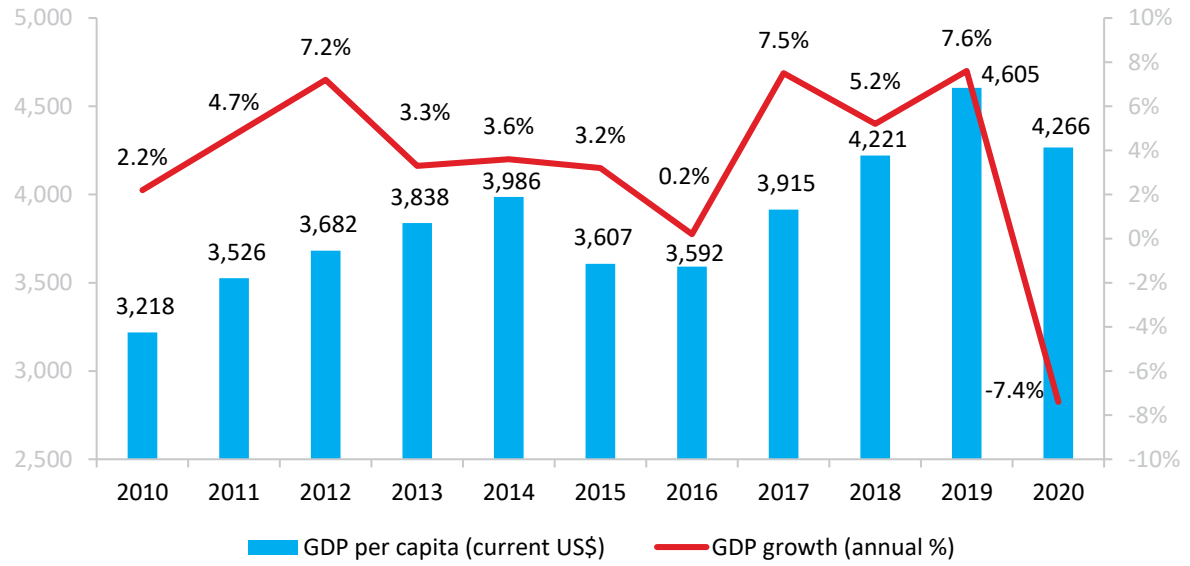
GDP AND GDP PER CAPITA TRENDS

This sub-section analyzes GDP dynamics to reflect the overall resources and development trend of Armenia, since, ultimately, funds for education can be mobilized from available resources.

> Armenia has shown moderate economic performance over the past decade, with GDP growth averaging 3.4% per year

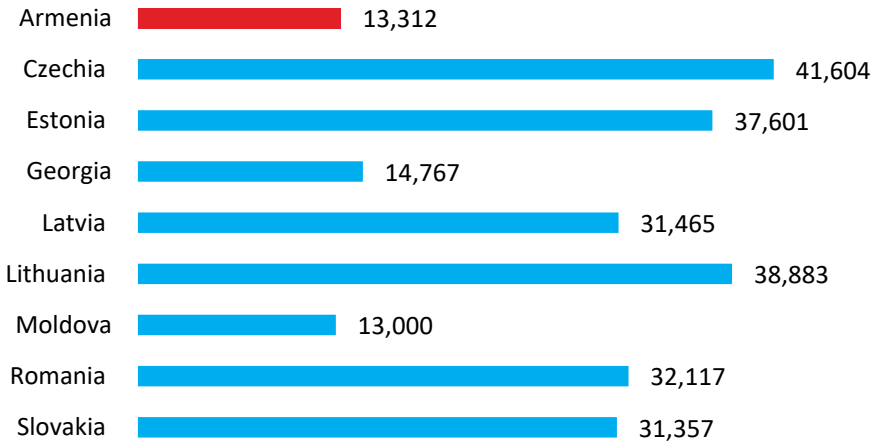
Armenia, an upper-middle-income country by the WB's classification (WB, 2022d), has shown moderate economic performance over the past decade, as real GDP growth for 2010-2020 averaged 3.4% per year. Meanwhile, in 2020, per capita GDP was 4,266 USD, that represents an increase of one-third over the past decade (Figure 2-2).

FIGURE 2 -2 GDP GROWTH AND GDP PER CAPITA DYNAMICS IN ARMENIA, CURRENT USD, 2010-2020



Source: WB, 2022

FIGURE 2-3 GDP PER CAPITA, PPP CURRENT USD, 2020



Source: WB, 2022

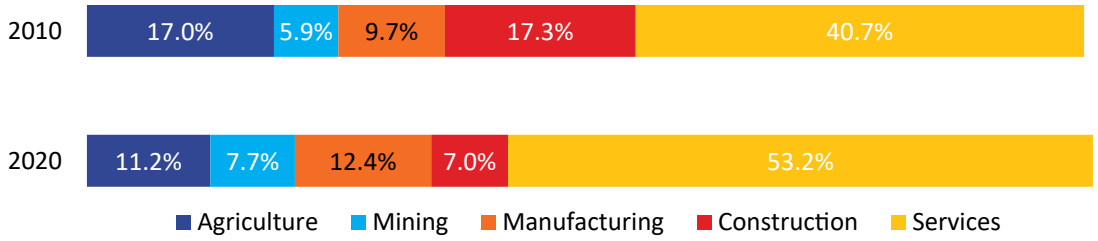
On a per capita basis, real GDP growth was slightly lower, at 3.1% per year in 2010-2020, since population growth was very slow at only 0.3% per year (Annex 2.2, Table 1).

Compared to peer countries, Armenia's per capita GDP of 13,312 USD in 2020 in purchasing power parity (PPP) terms was about the same size as Moldova's but one-tenth less than Georgia's (Figure 23). Meanwhile, compared to benchmark countries, Armenia's GDP per capita was multiple times lower; for example, it was 2.7 times lower

compared to the average of the Baltic States.

Over the past decade, the main drivers of Armenia's GDP growth have been services, manufacturing, and mining, while the shares of agriculture and construction in GDP have declined by 1.5 and 2.5 times, respectively (Figure 24). In 2020, the share of services in GDP was 53.2%, up 12.5 percentage points from 2010. Meanwhile, the combined share of mining and manufacturing in 2020 at 20.1% was higher by 4.5 percentage points compared with 2010.

FIGURE 2-4 GDP STRUCTURE IN ARMENIA, SHARE OF GROSS VALUE ADDED IN GDP, %

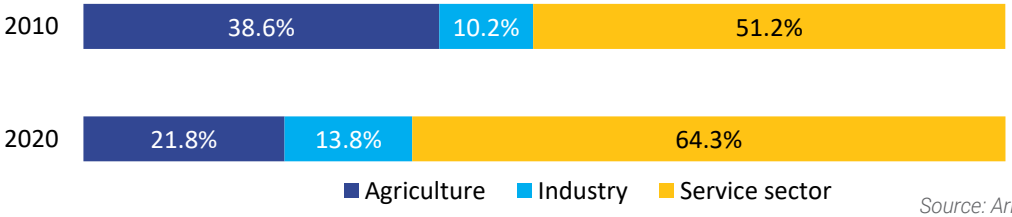


Source: Armstat, 2022

Although the share (but not the value added) of agriculture in GDP has decreased significantly, it continues to employ a sizeable portion of the labor force, as 21.8% of employed persons were in agriculture in 2020 (Figure 2-5). The latter was almost two times lower compared to 2010, when 38.6% of employed were in agriculture.

Employment in the services sector and industry expanded over the past decade, but not nearly as much as it declined in the agriculture. Thus, the total number of employed persons decreased by 132.000 in 2010-2020 (Annex 2.2, Table 2).

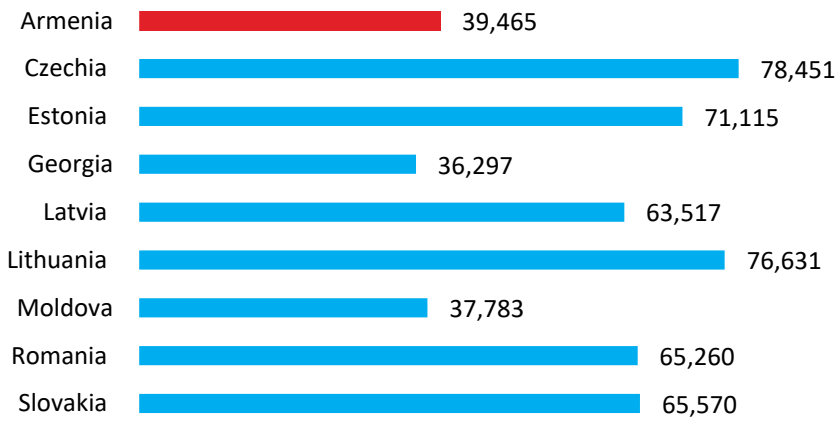
FIGURE 2-5 EMPLOYMENT BY ECONOMIC SECTOR, ARMENIA, % OF TOTAL, 2010-2020



Source: Armstat, 2022

The decline in total employment, combined with moderate economic growth, has led to a sizable increase in GDP per person employed. The latter was 39,465 USD in 2020 (in constant 2017 PPP USD), up 56% from 2010 (Annex 2.2, Table 2). Compared to peer countries, in 2020, GDP per person employed was higher in Armenia than in Georgia or Moldova, meanwhile it was only 1.8 times lower than the Baltic States' average (not 2.7 times lower, as with GDP per capita) (Figure 2-6).

FIGURE 2-6 GDP PER PERSON EMPLOYED, 2020, CONSTANT 2017 PPP USD



Source: WB, 2022

Nevertheless, 2020 was the worst year of the past decade, as GDP contracted by 7.4% due to the twin shocks of the military hostilities in and around Nagorno-Karabakh and the COVID-19 pandemic. This contraction abruptly ended robust economic growth that began in 2017 and peaked in 2019.

While the recovery from the 2020 downturn is currently underway, long-standing structural problems are restraining the Armenian economy from reaching its full potential. Among pressing concerns are outward migration; governance gaps, such as incomplete judicial reform; limited trade integration and undiversified trade patterns; an aging population; and a labor market characterized by high unemployment, pervasive informality, and skills mismatches (WB, 2021). Additionally, the persistence of geopolitical tensions in the larger region (uncertainty over the conflict in and around Nagorno-Karabakh and the conflict in Ukraine), coupled with the ongoing COVID-19 pandemic, continue to undermine investor confidence, and exacerbate existing challenges.

> Long-standing structural weaknesses in the economy pose risks to a sustained recovery

In 2021, the Armenian Government set the target of GDP growth to 7% per year for the period of 20212026 (Government, 2021). Meanwhile, in 2021, the GDP increased by 5.7% in real terms, with the IMF projecting (April, 2022) an average real GDP growth of 3.8% between 2022 and 2026 (IMF, 2022).

The WB projects that the Armenian economy will grow by 3.5% in 2022, with an uncertain outlook subject to high downside risks. For 2023 and 2024, the WB forecasts growth for Armenia at the rate of 4.6% and 4.9%, respectively (WB, 2022c; WB, 2022e).

The wider geopolitical context in the South Caucasus and beyond in terms of relations with Turkey and the impact of the conflict in Ukraine will continue to be an important factor determining the trajectory of Armenia's development.

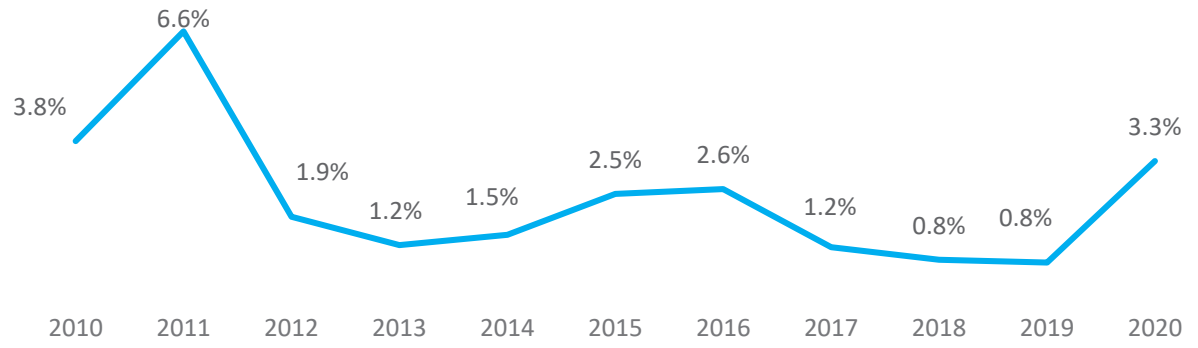
There are also huge downside risks associated with the sanctions imposed on the Russian Federation, since the Armenian economy is heavily dependent on Russia, as foreign trade, FDI inflows (albeit small), and migrant remittances are largely linked to Russia. Nevertheless, it is expected the negative impact of sanctions on the aggregate demand in Armenia will be partially offset by a significant inflow of people and capital, mainly from Russia, in 2022 (CBA, 2022).

PUBLIC RESOURCES

Recently, government revenues have increased considerably. In 2020, general government revenues amounted to 1,608.7B AMD, twice as much as in 2010, representing a compound annual growth rate of 7.2% (Annex 2.2, Table 3).

Taxes and duties comprised the absolute majority of revenues, 91.2% on average for the 2010-2020 period. Meanwhile, the external aid dependency ratio - the share of official grants in general government revenue is low, with an average of 2.4% in 2010-2020 (Figure 2-7).

FIGURE 2-7 EXTERNAL AID DEPENDENCY RATIO, %, 2010-2020



Source: Armstat, 2022

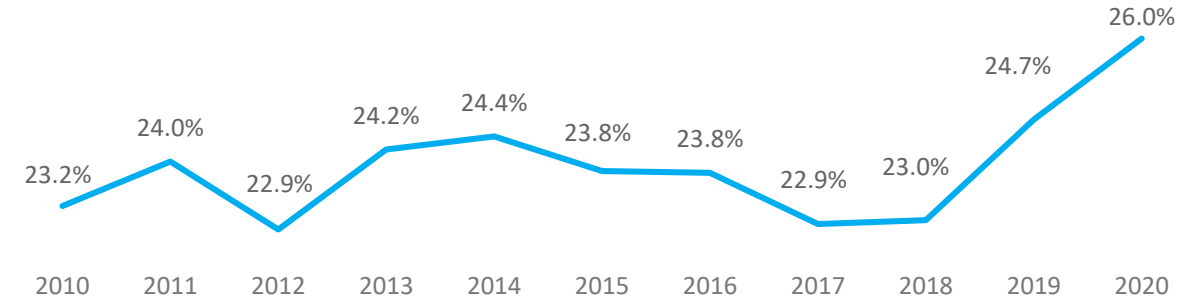
Prior to the COVID-19 pandemic, the external aid dependency ratio had a decreasing trend, falling to just 0.2% of the GDP in 2018-2019. However, in 2020, due to a decrease in tax revenues because of the economic crisis, the share and size of official grants increased again, reaching 0.9% of the GDP.

> Over the past decade, public revenues have increased by 7.2% per annum in nominal terms, with a revenue-to-GDP ratio averaging 23.9%

The ratio of general government revenue to GDP averaged 23.9% in 2010-2020. Meanwhile, in 2020, the revenue-to-GDP ratio reached 26% (Figure 28), although it was an atypical year as GDP contracted by 7.4% while the decline in government revenue was marginal due to a very large increase in non-tax revenues.

Overall, in 2010-2020, taxes and duties on average comprised 21.8% of the GDP, while revenue, excluding grants, averaged 23.3% (Annex 2.2, Table 3).

FIGURE 2-8 GENERAL GOVERNMENT REVENUE, % OF GDP, 2010-2020



Source: Armstat, 2022

PUBLIC EXPENDITURE

In 2020, general government expenditures amounted to 1,924.9B AMD, with a deficit of 316.2B AMD (Annex 2.2, Table 4). On average, for the 2010-2020 period, the deficit amounted to 159.2B AMD or 3.2% of the GDP (Armstat, 2022).

Over the past decade, expenditure has risen sharply. In 2020, it was twice as high as in 2010, resulting in an average annual growth of 7%[7]. The bulk of the increase in spending was due to the expansion of current expenditure. In 2010-2020, current expenditure grew by an average of 8% per annum, compared to an average annual growth of only 2.1% in capital expenditure. Because of this disproportionate growth, the share of capital expenditure in total expenditure declined from 20% in 2010 to just 12.4% in 2020.

The increase in expenditure was accompanied by an increase in interest payments, both domestic and external, with about half of interest payments being domestic in 2010-2020.

This is a classic case of a vicious circle between deficit financing and interest payments. The Armenian government, after the global financial crisis of 2008, driven by a desire to prevent a significant deterioration in the social situation, sharply increased deficit financing. Later, another round of stimulus was introduced to mitigate the consequences of the 2014 shock from Russia. These policies led to the accumulation of massive public debt, with the public debt-to-GDP ratio more than tripling between 2008 and 2016 (WB, 2017). The increase in debt led to an increase in interest payments, which, in turn, exacerbated the need for further increases in deficit financing.

Thus, over the 2010-2020 period, interest payments increased by a factor of 5.4, averaging a 18.5% growth per year. With such a rate of expansion, interest payments will reach the 2020 level of non-interest expenditure (1,760.1B AMD) in 2034.

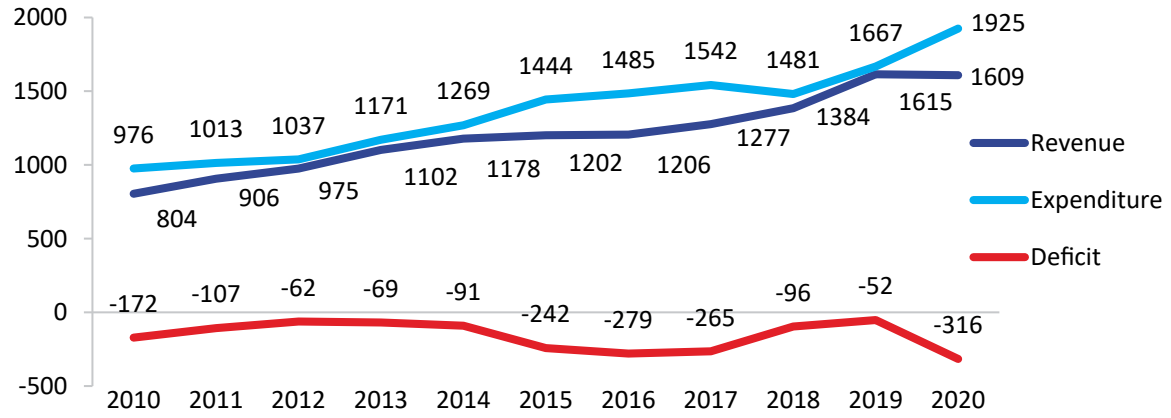
Deficit has shown a cyclical trend with two peaks in 2016 and 2020 (Figure 29). In 2019, the year before the COVID19 pandemic and military hostilities, the deficit was only 0.8% of the GDP, rising sharply to 5.1% of the GDP in 2020. At the same time, the deficit, excluding grants, rose to 6% of the GDP in 2020, an increase of a factor of 6 compared to the previous year. Overall, the deficit-to-GDP ratio, excluding grants, was 3.8% in 2010-2020 (Annex 2.2, Table 5).

> In 2018-2020, education and health accounted for 9.6% and 6.4% of public expenditures, respectively

In financing the deficit, the role of external sources is not dominant. The cumulative deficit in 2010-2020 amounted to 1,751.7B AMD, of which 54% was financed from external sources.

In the structure of expenditure, the largest recipient of funds in 2018-2020 was social protection, which accounted for 28% of general government expenditure. Defence was the second largest recipient of funds, with the combined share of defence, public order, and safety amounting to 26.7% of spending. Education and health, meanwhile, accounted for 9.6% and 6.4% of expenditures, respectively (Annex 2.2, Table 6).

FIGURE 2-9 GENERAL GOVERNMENT REVENUE, EXPENDITURE AND DEFICIT, B AMD, 2010-2020



Source: Armstat, 2022

[7] All data in this report are nominal unless otherwise noted.

SECTION 2-2: PUBLIC EXPENDITURE ON EDUCATION

This section examines the level of public expenditure on education, as well as key indicators that reflect the importance of education expenditure in the national context.

> The share of education in total public expenditure declined from 10.1% in 2018 to 9.1% in 2020, as the growth of public spending on education was slower than the growth of general government spending

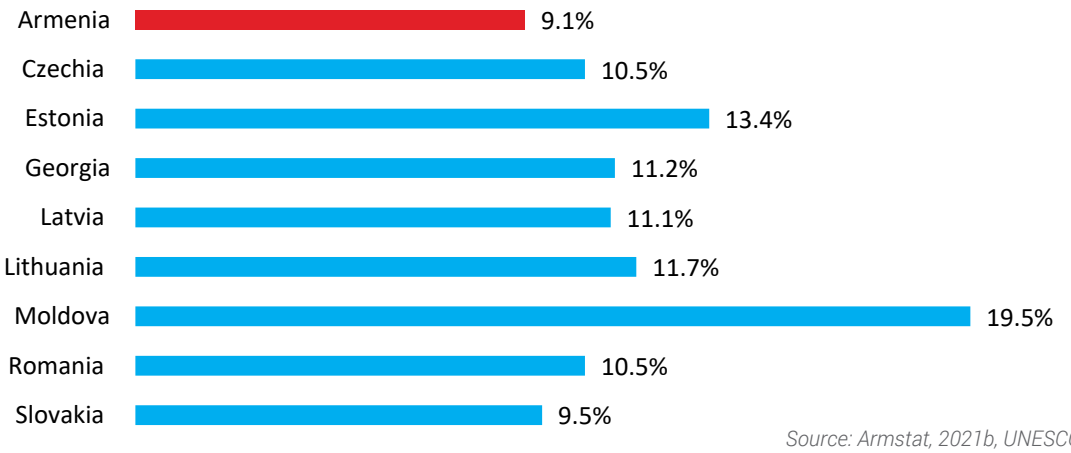
In the discussion that follows, education expenditures are analyzed within the framework of the consolidated budget of the general government, which is a combination of state and community budgets. Community budgets are important when discussing education financing in Armenia since pre-primary education is largely financed through community budgets.

In this section, all analysis of past years is based on actual rather than planned expenditures.

In 2020, total public spending[8] on education amounted to 174.5B AMD, which is 17% higher compared with 2018, resulting in an average annual growth of 8.2% (Armstat, 2021b).

Meanwhile, in 2018-2020, the share of education in total public expenditure has been on a downward track: 9.1% in 2020 compared with 10.1% in 2018 (Annex 2.2, Table 6). In terms of this indicator, Armenia is the worst performer among peer and benchmark countries. In Georgia, the ratio of education spending to total spending was 11.2%, while in Moldova it was a whopping 19.5% (Figure 2-10).

FIGURE 2-10 SHARE OF EDUCATION IN GENERAL GOVERNMENT EXPENDITURE, 2020 OR LATEST



Source: Armstat, 2021b, UNESCO, 2022

In 2020, public spending on education amounted to 2.8% of the GDP (Table 2-1), which, although higher than in 2018 or 2019, was partly the result of a sharp decline in GDP in 2020 due to the pandemic and the conflict in and around Nagorno-Karabakh.

TABLE 2-1 RELATIVE INDICATORS OF PUBLIC FINANCING OF EDUCATION, 2018-2020

INDICATOR	2018	2019	2020
General government expenditure on education, B AMD	149.0	158.9	174.5
As a share of general government expenditure	10.1%	9.5%	9.1%
As a share of gen. gov. expenditure, excl. service of debt	11.1%	10.5%	9.9%
As a share of general government revenue, excl. grants	10.9%	9.9%	11.2%
As a share of GDP	2.5%	2.4%	2.8%

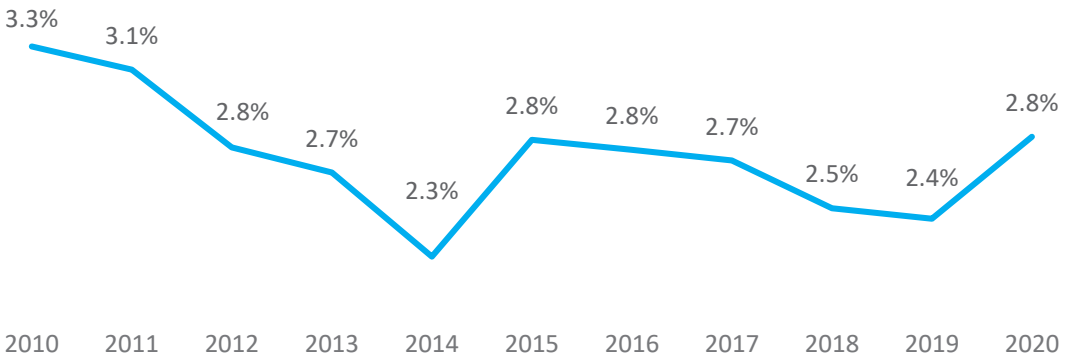
Source: Armstat, 2021b

[8] In this report "public spending" refers to the "consolidated budget expenditures".

From the perspective of long-run trends, it is noteworthy that at the beginning of the past decade, the ratio of public spending on education to GDP was higher - 3.3% in 2010, but since 2014 it has averaged 2.6% (Figure 2-11).

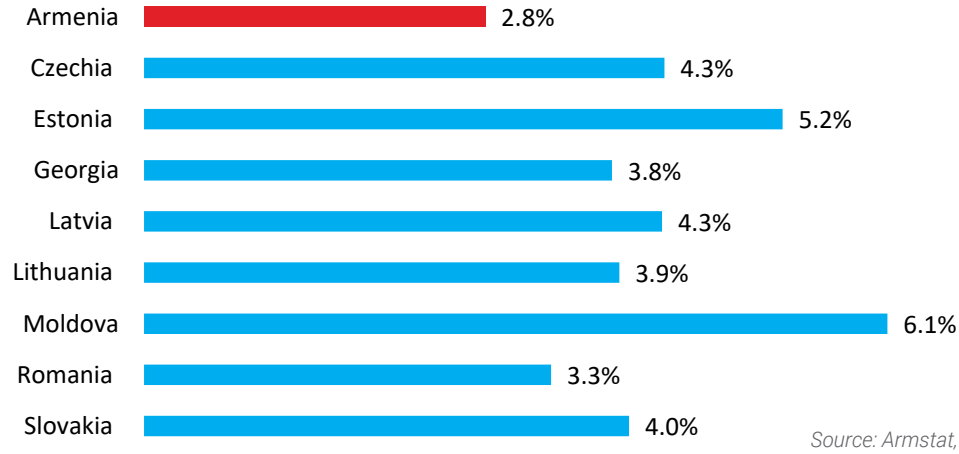
Hence, in terms of the share of GDP spent on education, Armenia at 2.8% trailed behind both peer and benchmark countries. In particular, this share was 3.8% in Georgia and 6.1% in Moldova, while averaging 4.5% in the Baltic States (Figure 2-12).

FIGURE 2-11 GENERAL GOVERNMENT EXPENDITURE ON EDUCATION AS A PERCENT OF GDP, %, 2010-2020



Source: Armstat, 2021b

FIGURE 2-12 GENERAL GOVERNMENT EXPENDITURE ON EDUCATION AS A PERCENT OF GDP, %, 2020 OR LATEST



Source: Armstat, 2021b, UNESCO, 2022

> The share of GDP spent on education declined from 3.3% in 2010 to 2.8% in 2020

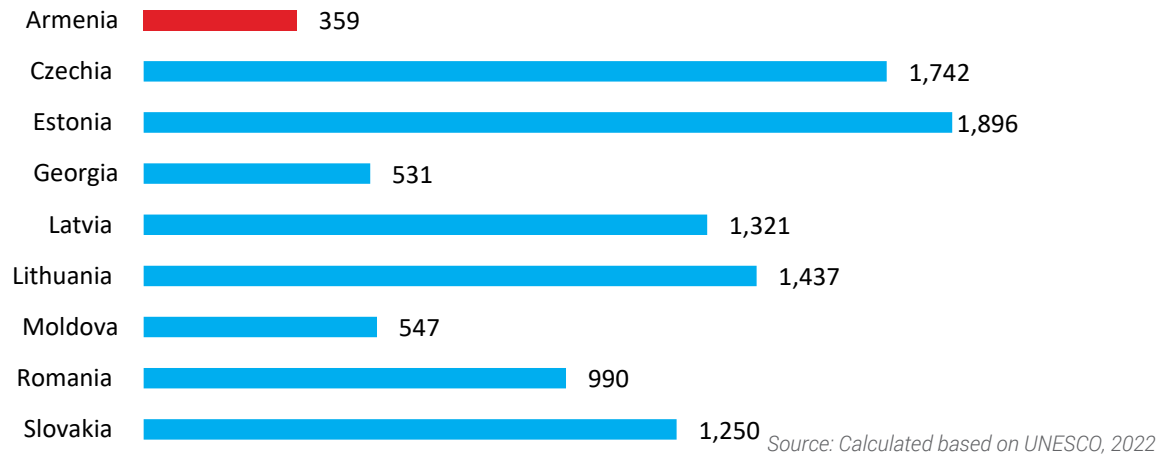
The national financial effort for education, which is the share of education in total public spending excluding the service of debt (UNESCO, WB, UNICEF, GPE, 2014), was on a downward track, as well: 9.9% in 2020 compared to 11.1% in 2018 (Table 2-1). This indicator reflects the priority given by the government to education within the expenditure over which it has control.

A government's capacity to finance education depends on the revenue it can generate from taxes. In 2020, revenue excluding grants was at 1,555.4B AMD, compared to 1,372.8B AMD in 2018 (Annex 2.2, Table 3). Meanwhile, the ratio of public spending on education to total revenue of the general government, excluding grants, was 11.2% in 2020 compared to 10.9% in 2018 (Table 2-1) (this increase was partly due to a decline in tax revenues in 2020). Nevertheless, this increase indicates a shrinking capacity to finance education.

National financial effort for education, and government's capacity to finance education are shrinking

On a per capita basis, general government expenditure on education in Armenia amounted to 359 PPP USD in 2020, the lowest among peer and benchmark countries. In Georgia and Moldova, per capita public expenditure on education was about 50% higher (Figure 2-13).

FIGURE 2-13 GENERAL GOVERNMENT PER CAPITA EXPENDITURE ON EDUCATION, PPP USD, 2020 OR LATEST



Source: Calculated based on UNESCO, 2022

PUBLIC EXPENDITURE BY TYPE OF SPENDING

Current expenditures account for about nine-tenths of total expenditures in public educational institutions in Armenia, with about 60% of current expenditures being staff compensation (Table 2-2). The data in the table pertains to 2020, but this structure is quite typical for the recent years.

Teaching staff compensation accounts for just over half of total expenditures, with the structure being roughly the same for both primary and secondary public educational institutions.

In Armenia, the share of teaching staff compensation in school budgets is high, but absolute compensation is low, as public expenditures on education are among the lowest

Compared to benchmark countries, the share of teaching staff compensation in Armenia is relatively high. In particular, Armenia's indicator in primary (secondary) education is by 4.2 (9.4) percentage points higher than the benchmark (in this sub-section, the benchmark means the average for the Czechia, Estonia, Latvia, Lithuania, Moldova, Slovakia, and Slovenia; the data is for 2020 or latest available) (Table 22, Annex 2.2, Table 7).

Among the observed countries, the share of teaching staff compensation is the lowest in the Czechia and Estonia (Annex 2.2, Table 7). This is the result of significantly higher spending on education, which is reflected, for example, in the fact that per capita expenditures on education in Czechia and Estonia are at the higher end (Figure 2-13).

The share of non-teaching staff compensation in Armenia is also high, as Armenia's indicator in primary (secondary) education is by 2.4 (6.0) percentage points higher than the benchmark.

The most significant deviation from the benchmark is in the share of "other than staff compensation" category, as Armenia's figure is much lower. Specifically, Armenia's indicator in primary (secondary) education is by 9.8 (15.8) percentage points lower than the benchmark. This may entail an inadequate supply of teaching materials.

TABLE 2-2 EXPENDITURE IN PUBLIC EDUCATIONAL INSTITUTIONS BY TYPE OF SPENDING, %, 2020

INDICATORS	ARMENIA		BENCHMARK*	
	Primary	Secondary	Primary	Secondary
Current expenditure	86.4%	89.5%	90.3%	90.3%
All staff compensation	75.3%	81.3%	69.4%	66.3%
Teaching staff compensation	51.6%	55.7%	47.4%	46.3%
Non-teaching staff compensation	23.7%	25.6%	21.3%	19.6%
Other than staff compensation	11.1%	8.2%	20.9%	24.0%
Capital expenditure	13.6%	10.5%	9.7%	9.7%
Total spending	100%	100%	100%	100%

*Average for Czechia, Estonia, Latvia, Lithuania, Moldova, Slovakia, Slovenia, 2020 or latest year available. Details in Annex 2.2, Table 7.

Source: UNESCO, 2022

THE DISTRIBUTION OF SPENDING ON EDUCATION ACROSS SUB-SECTORS

Secondary education is the largest recipient of public spending on education, with primary education being the second. In 2016-2021, these two sub-sectors together accounted for two-thirds of public spending on education by sub-sectors. In spending on secondary education, lower secondary and upper secondary education accounted for about twothirds and one-third, respectively (Table 2-3).

TABLE 2-3 GENERAL GOVERNMENT EXPENDITURE ON EDUCATION BY SUB-SECTOR, B AMD, 2016-2020

Sub-sectors	2016	2019	2020	2021
Pre-primary education	16.7	21.7	19.2	24.4*
Primary and Secondary	83.9	82.6	63.3	92.8
Primary education (% in sub-sectors total)	28.7 (24%)	26.9 (21%)	20.9 (21%)	33.1 (23%)
Secondary education (% in sub-sectors total)	55.2 (46%)	55.7 (44%)	42.4 (43%)	59.7 (42%)
Lower secondary education	39.2	38.5	28.1	40.9
Upper secondary education	16.0	17.2	14.3	18.8
VET	9.0	10.6	7.8	10.6
Tertiary education	11.6	11.2	7.9	13.7
Sub-sectors total	**121.2**	**126.1**	**98.3**	**141.5**

*Estimated by ESA based on 2021 actual expenditure of the central government and January-June 2021 actual expenditure of the communities

Source: Government, 2022; MoTAI, 2022

The next two sub-sections analyse the spending on pre-primary, primary, and secondary education.

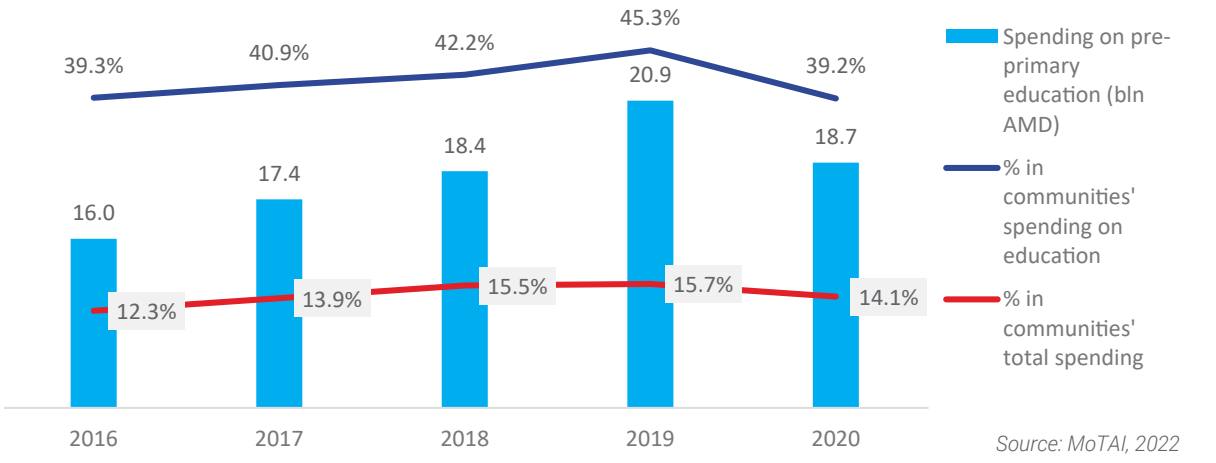
> Secondary and primary education together consumed two-thirds of public spending on education by sub-sectors in 2016-2021

EXPENDITURE ON PRE-PRIMARY EDUCATION

In 2020, there were 847 community, 10 departmental and 53 non-state (private) kindergartens in Armenia (Armstat, 2021a). Community preschool institutions are funded from community budgets, while departmental kindergartens are financed from the budgets of their respective departments. In addition, the central government has recently begun providing subsidies to those public schools that offer preschool services to five-year-old children.

Public kindergartens are free of charge in Yerevan, as Yerevan Municipality has provided free kindergarten access since 2010. In the marzes, they are available for a fee, though the amount varies by community and is largely nominal. For example, according to a 2019 WB study, monthly fees averaged 5,200 AMD in Ararat, 3,300 AMD in Gegharkunik, and 4,000 AMD in Lori. These fees do not cover kindergarten costs, and kindergartens are heavily subsidized by communities. Nevertheless, these fees may still represent a substantial amount of money for poor households, as they accounted for about a fifth of the average per child consumption in 2017 for households living below the upper poverty line (Ayliffe, Honorati, & Zumaeta, 2019).

FIGURE 2-14 COMMUNITIES' SPENDING ON PRE-PRIMARY EDUCATION (YEREVAN AND THE MARZES), 2016-2020



Source: MoTAI, 2022

What follows is the discussion of community and state budget spending on preschool education. All data on community spending comes from Community Budget Spending Reports (MoTAI, 2022). Data on state budget expenditures comes from the government's interactive budget (Government, 2022).

COMMUNITIES' EXPENDITURE ON PRE-PRIMARY EDUCATION | In 2020, communities' spending (Yerevan and the marzes) on preschool education amounted to 18.7B AMD (38.3M USD) (Figure 214), which was 39.2% of communities' total spending on education and 14.1% of communities' total spending on all items.

Nominally, communities' spending on pre-primary education increased by 31% in 2016-2019, but in real terms, the increase was 24%, corresponding to a real increase of 7.6% per annum.

Compared to peer and benchmark countries, Armenia was the worst performer, since on a per capita basis, the general government's expenditure on preschool education was the lowest at 43.7 PPP USD in 2020 (Figure 2-15).

Yerevan's share in communities' spending on preschool education was 39.3% in 2020 (Annex 2-2, Table 8), which was in line with Yerevan's share in the total number of preschool students in Armenia – 38.5%. In 2016-2020, Yerevan's share in spending decreased from 47.3% to 39.3% due to

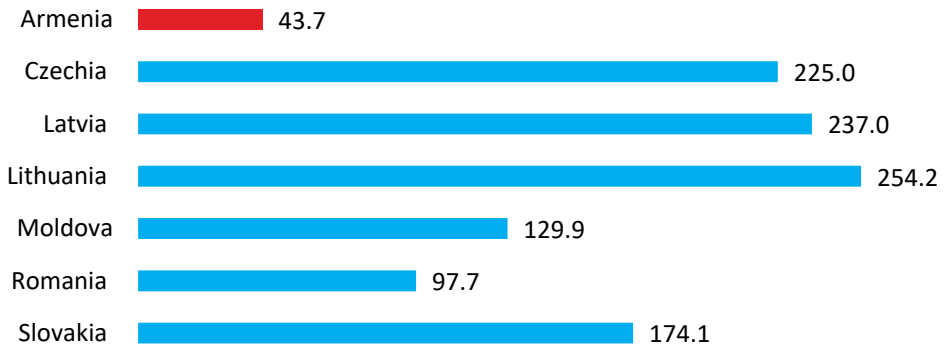
increased spending in the marzes, most notably in Gegharkunik (with the compound annual growth rate (CAGR) of 19% in 2016-2020), Syunik (16%), and Kotayk (15%).

> On a per capita basis, Armenia's spending on pre-primary education is the lowest among peer and benchmark countries

Administrative (current) spending comprised the bulk of communities' expenditures on preschool education, with just 5.3% of expenditures being capital spending over the period of 2016-2020 (Annex 2-2, Table 9 and 10). In parallel, there were significant differences in the average share of capital spending between the marzes, ranging from 1.4% in Yerevan to 16.5% in Gegharkunik.

Over the 2016-2020 period, capital spending of communities increased sharply at a CAGR of 58.7%. As a result, the share of capital spending increased from 2.3% in 2016 to 12.6% in 2020 (5.7% in pre-pandemic 2019).

FIGURE 2-15 GENERAL GOVERNMENT PER CAPITA SPENDING ON PRE-PRIMARY EDUCATION, $PPP, 2020 OR LATEST



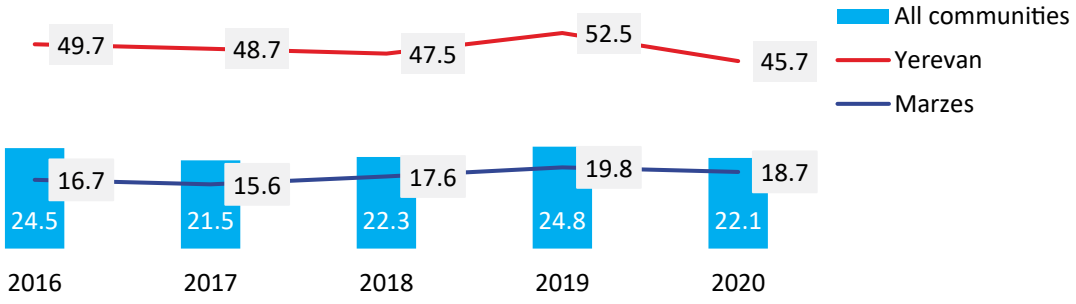
Source: Calculated based on UNESCO, 2022

Recently, Yerevan Municipality has considerably increased funding for the capital renovation of preschool institutions. In 2022, 2.94B AMD was allocated for the capital renovation of nine kindergartens (Yerevan Municipality, 2021). Overall, in 2020-2022, two and a half times more funds were appropriated for the capital renovation of preschool institutions than in 2017-2019.

Also, in 2022, 3.3B AMD was allocated from the State Budget for the construction of modular kindergartens in the marzes.

COMMUNITIES' EXPENDITURE PER INSTITUTION | In 2020, average annual spending of communities per preschool institution (both administrative and capital) was 22.1M AMD (45.200 USD) (Figure 2-16).

FIGURE 2-16 COMMUNITIES' SPENDING ON PRESCHOOL EDUCATION PER INSTITUTION, M AMD, 2016-2020



Source: Calculated based on MoTAI, 2022, Armstat, 2021a

There were significant differences in per institution spending between the marzes ranging from as low as 9.6M AMD in Shirak to as high as 44M AMD in Kotayk and 45.7M AMD in Yerevan (Annex 2.2, Table 12).

Even excluding the pandemic year 2020, average spending per institution has not increased noticeably. Over the period of 2016-2019, spending per preschool institution increased only in Yerevan (at a CAGR of just 2%) and in six out of the 10 marzes (Annex 2.2, Table 12).

> Even excluding the pandemic year 2020, average spending per preschool in Armenia grew by an average of only 0.5% per annum in 2016-2019, actually declining in real terms, adjusted for inflation

COMMUNITIES' EXPENDITURE PER STUDENT | In 2020, communities spent an average of 351.000 AMD per student annually on preschool education (29.000 AMD or 59 USD per month) (Figure 2-17). Although this figure is low in of itself, it is misleading as the number of enrolled students dropped dramatically in 2020, thus artificially increasing per student expenditure.

> In pre-pandemic 2019, per pre-primary student spending accounted for only 1,076 AMD (or 2.2 USD) per working day

In 2019, which is a more representative year, per student spending was 266.800 AMD (22.100 AMD or 45 USD per month). There were differences between the marzes, ranging from 197.800 AMD in Armavir to 309.700 AMD in Kotayk (Annex 2.2, Table 14).

During the 2016-2019 period, per student spending increased with an annual average rate of 4.5%, the steepest increase occurring in Syunik (14%), Tavush (12%), and Kotayk (12%). In Yerevan, the annual growth was only 2%.

STATE BUDGET EXPENDITURE ON PRESCHOOL EDUCATION | The central government allocates very limited funds to preschool education. For the period of 2016-2021, appropriations averaged 802M AMD, which represented only 4.5% of communities' spending on preschool education.

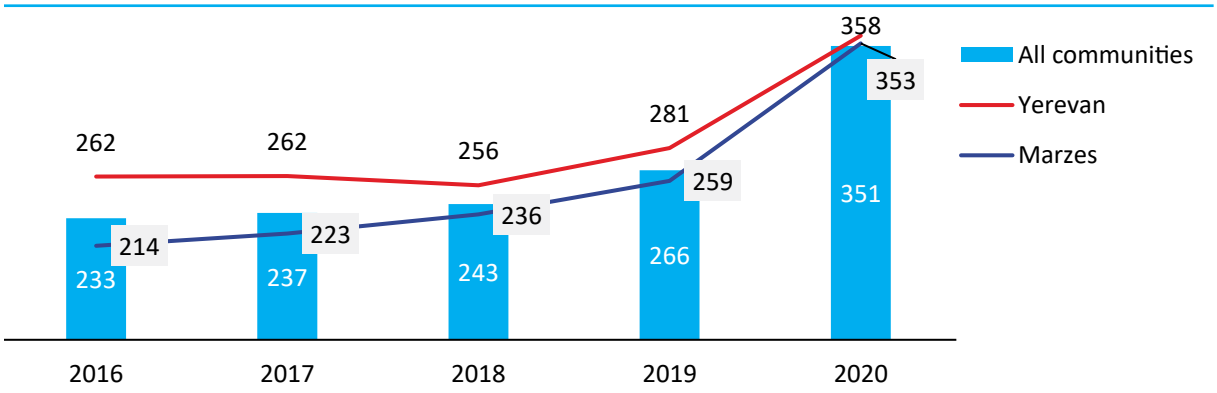
In 2020, out of 922M AMD allocated for preschool education, only 57.1% (526M AMD) was spent (the budget was under-executed due to the COVID-19 pandemic and the conflict in and around Nagorno-Karabakh).

Thus, in 2016-2021, the state budget's actual spending on preschool education averaged 727M AMD (Figure 218), which were mainly distributed as subsidies to various community preschool institutions. These expenditures amounted to only 0.6% of the state budget's spending on education.

> Expenditures on preschool education amounted to less than 1% of the state budget expenditures on education

In addition, since 2020, the Government has launched a new project to finance the setup of alternative (low-cost) early childhood development centers in those communities where there are no preschool institutions (according to the Law on State Budget, the number of such communities was 201).

FIGURE 2-17 COMMUNITIES' SPENDING ON PRESCHOOL EDUCATION PER STUDENT, 1000 AMD, 2016-2020

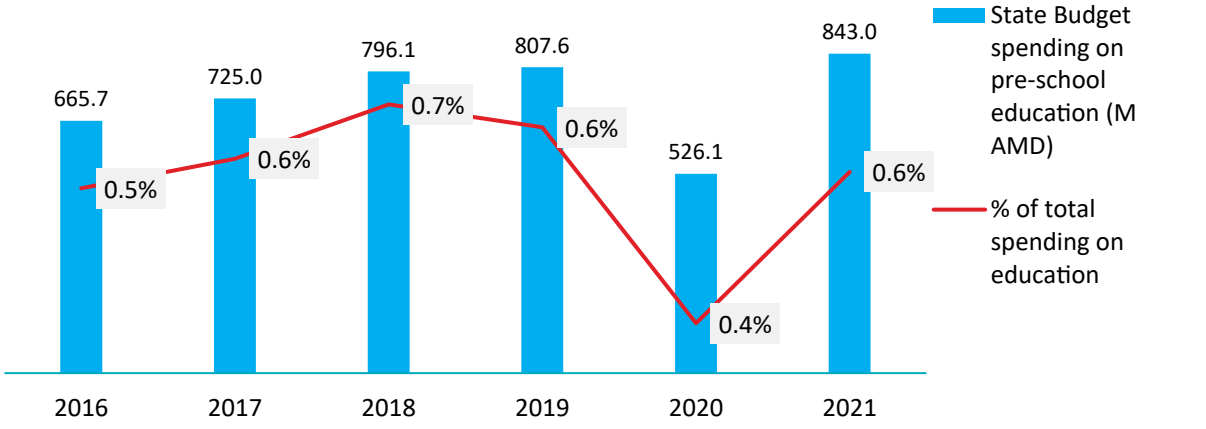


Source: Calculated based on MoTAI, 2022, Armstat, 2021a

In 2020, out of 155M AMD allocated for this project (to receive funding, communities should submit applications) nothing was spent, as the regulation for submitting and evaluating projects was adopted a year later, on January 25, 2021 (MoESCS, 2021b). In 2021 (and again in 2022), only 77.5M AMD was allocated for this project.

In 2022, 926M AMD was appropriated for preschool education and an additional 237M AMD to support the enrollment of children from socially disadvantaged groups (Law on State Budget, 2022).

FIGURE 2-18 STATE BUDGET SPENDING ON PRESCHOOL EDUCATION, M AMD, 2016-2021



Source: Calculated based on Government, 2022a, 2022b

PRIVATE EXPENDITURE ON PRESCHOOL EDUCATION | Sales turnover data for preschool institutions has been used to provide an indicative estimation of the amount of private funding. Sales turnover shows the revenue generated from the provision of services and, if complete, is a good indicator of private household spending on preschool education.

In 2020, according to data obtained from State Revenue Committee, 676 taxpayers were involved in the provision of preschool education services, of which 570 were public non-profit organizations, 21 were state non-profit organizations, and 85 were private enterprises. The total turnover of these service providers amounted to 1.8B AMD (3.8M USD) in 2020, and 3.2B AMD (6.6M USD) in 2019.

The turnover in 2019 was equivalent to 15.2% of the communities' spending on preschool education (turnover in 2020 – 9.8%). In the 2019 turnover, the share of private enterprises stood at 63% (54% in 2020).

EXTERNAL FINANCING OF PRESCHOOL EDUCATION | The most extensive preschool renovation project in Yerevan is currently being implemented within the framework of Yerevan Energy Efficiency Project (a 15M EUR project implemented by the European Investment Bank and the Eastern Europe Energy Efficiency and Environment Partnership Fund). The project aims to improve energy efficiency, seismic stability, and sanitary condition of 90 kindergartens in Yerevan (EIB, 2021).

EXPENDITURE ON PRIMARY AND SECONDARY EDUCATION

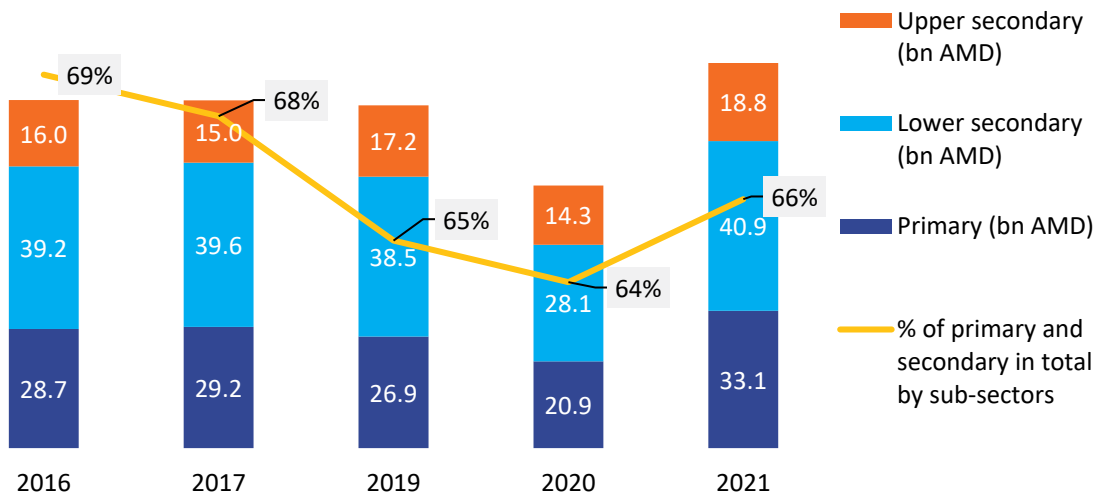
In 2021, government spending on primary education amounted to 33.1B AMD, having increased by 2.8% per year since 2016. Meanwhile, government spending on secondary education amounted to 59.7B AMD, on average increasing by 1.6% in 2016-2021 (Figure 2-19).

> Total government spending on primary and secondary education decreased by 0.6% per year in real terms in 2016-2021.

Of the expenditure on secondary education, 40.9B AMD were spent on lower secondary education (about two-thirds) and 18.8B AMD on upper secondary education.

The total spending on primary and secondary education - 92.8B AMD - exceeded spending on tertiary education by about 7 times and VET – about 9 times (Table 2-3).

FIGURE 2-19 GOVERNMENT EXPENDITURE ON PRIMARY & SECONDARY EDUCATION, B AMD, 2016-2021



Source: Government, 2022

In 2021, total spending on primary and secondary education amounted to 92.8B AMD, which, compared to the 2016 expenditure of 83.9B AMD, in nominal terms, corresponded to an average annual growth of 2.0% since 2016 (Table 2-3).

> Real spending on primary and upper secondary education increased at an annualized rate of 0.5% in 2016-2021, while on lower secondary education decreased at a rate of 1.7%

Meanwhile, adjusted for inflation, the expenditures of 2016, expressed in 2021 prices, amounted to 95.6 billion drams. Thus, at constant prices[9], total spending on primary and secondary education in 2021 was 2.9% lower than in 2016, corresponding to an average annual real decline of 0.6% (Table 2-4).

Table 2-4 Government expenditure on education by education level, B AMD (constant prices)

Education level	2016 (in 2021 prices)	2021	CAGR in 2016-2021
Primary education	32.7	33.1	0.3%
Secondary education	62.9	59.7	-1.0%
Lower secondary education	44.6	40.9	-1.7%
Upper secondary education	18.2	18.8	0.6%
Total primary and secondary	**95.6**	**92.8**	**-0.6%**

Source: ESA based on Government, 2022

> Public spending on primary and secondary education in Armenia, at $270.2 PPP in 2020, is the lowest among peer and benchmark countries

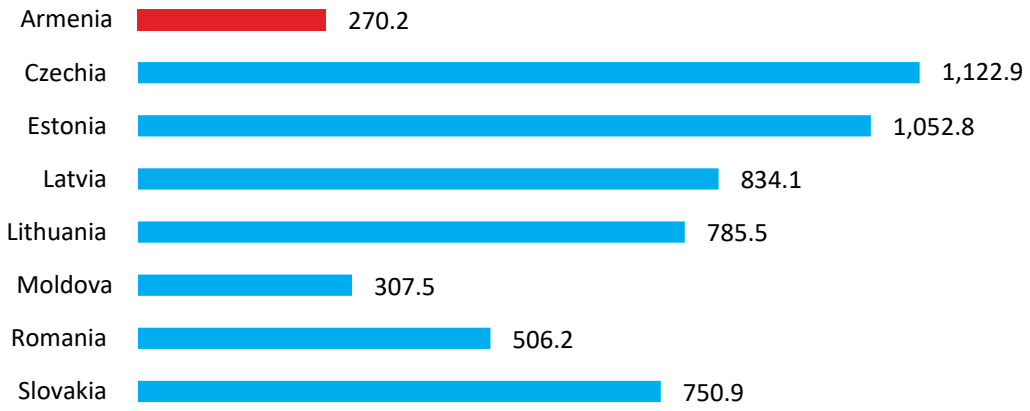
By level of education, in 2016-2021, real expenditures increased in both primary and upped secondary education at meager annual rates of 0.3% and 0.6%, respectively. In parallel, real expenditures decreased at an annualized rate of 1.7% in lower secondary education.

On a per capita basis, expenditure on primary and secondary education in Armenia amounted

[9] In this report CPI is used to calculate the real values

to 270.2 PPP USD in 2020 (Figure 220). Armenia was the worst performer among peer and benchmark countries. Compared to Armenia, per capita expenditures in Moldova were higher by 13.8%, and in the Baltic States - by 3.3 times.

FIGURE 2-20 GENERAL GOVERNMENT PER CAPITA EXPENDITURE ON PRIMARY AND SECONDARY EDUCATION, PPP USD, 2020 OR LATEST AVAILABLE YEAR



Source: UNESCO, 2022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FINANCING SCHEME OF GENERAL EDUCATIONAL INSTITUTIONS | Until 2020, all public general education institutions were financed by the number of students. The total amount allocated per year to an institution was equal to the number of students multiplied by a predetermined sum (124.000 AMD in 2018) plus a minimum amount for the maintenance of the institution (for example, 19M AMD for schools with less than 100 students) and other disbursements (MoF, 2017). But this scheme was ineffective in providing sufficient funding for small schools.

> In 2022, the planned state budget funding for secondary education corresponds to an annual growth of only 0.3% compared to 2019, while planned funding for primary education corresponds to an annual growth of 5.8%

Since 2020, the funding of small schools depends not only on the number of students but also on the number of classes and the number of full-time teachers per class (Government, 2019b). The intention is to discourage schools from filling classes with the maximum number of students.

TRENDS IN GENERAL EDUCATION FINANCING | In 2022, 104.5B AMD are planned to be allocated from the state budget for primary and secondary education, which in real terms is 6.6% higher compared to 2019, corresponding to an average annual real growth of 2.2% (Table 2-5).

The positive real growth in education spending (albeit planned) will be a significant development if implemented, especially given that the GDP growth in 2022 is forecasted at 1.6% by CBA as of the 1st quarter 2022 (CBA, 2022).[10]

> The planned state budget spending on primary and secondary education, if implemented, will correspond to an annual growth of 2.2% compared to 2019, which will be a milestone for the government, especially given that GDP growth over the same period is projected to be zero

By levels of education, primary education is planned to be financed in the amount of 37.3B AMD, corresponding to an annual real growth of 5.8% compared to 2019.

Financing for lower secondary education in the amount of 46.3B AMD corresponds to an annual real decrease of 0.2% compared to 2019, while financing for upper secondary education in the amount of 20.9B AMD corresponds to an annual real growth of 1.6%.

Overall, financing for secondary education corresponds to an annual real growth of 0.3% over the period of 2019-2022.

TABLE 2-5 PLANNED STATE BUDGET EXPENDITURE ON PRIMARY & SECONDARY EDUCATION, B AMD, 2022

INDICATOR	2019 (in 2022 prices*)	2022	CAGR in 2019-2022*
Pre-primary education	0.966	1.004	1.3%
Primary education	31.5	37.3	5.8%
Secondary education	66.5	67.2	0.3%
Lower secondary education	46.6	46.3	-0.2%
Upper secondary education	19.9	20.9	1.6%
Total primary and secondary	**98.0**	**104.5**	**2.2%**

*Calculated based on CBA's 2022 CPI forecast of 6.6% (CBA, 2022).

Source: ESA based on Ministry of Economy, 2022, State Budget, 2022

[10] GDP growth was minus 7.4% in 2020, 5.7% in 2021, and is projected at 1.6% in 2022 (CBA, 2022). When education expenditures were planned at the end of 2021, GDP growth was projected by the Government at 7%.

KEY PROJECTS FUNDED BY THE STATE BUDGET IN 2022 | The 15.6B AMD **"Safe School"** project aims to increase the resilience of schools to major risks. The two key components of this program are the construction of modular buildings for small-scale schools (which will operate as community centers) worth 8.1B AMD and the construction of sports halls for schools worth 3.9B AMD (Table 2-6).

Within the framework of **EU and WB grants**, 8.8B AMD were allocated for the capital renovation of school buildings. In parallel, within the framework of a project implemented with the **ADB**, 6B AMD is allocated to improve the seismic resistance of school buildings.

PLANNED STATE BUDGET EXPENDITURE ON EDUCATION | For 2022, the total planned state budget expenditure on education is 175.0B AMD, which corresponds to 2.3% of the projected GDP[11] (comparable figure in 2021 was 2.1%) and 8.0% of the state budget projected expenditures (Government, 2021b).

> Spending on education is planned at the 1.7% of GDP in 2024

According to the Medium-Term Expenditure Program (MTEP) for 2022-2024, spending on education is planned at the level of 149.2B AMD for 2023 and 148.6B AMD for 2024. From these amounts, it follows that, for 2023, education spending is planned at the level of 1.8% of the GDP and 7.0% of state budget expenditures, while for 2024, it is planned at the level of 1.7% of the GDP and 6.4% of state budget expenditures (Government, 2021b).

TABLE 2-6 PLANNED STATE BUDGET EXPENDITURE ON EDUCATION BY MAJOR PROGRAMS, B AMD, 2022-2014

INDICATOR	2022*	2023*	2024*
General education	112.4	104.8	104.4
Kindergarten construction	3.3	…	…
Extracurricular education	4.3	…	…
Safe school	15.6	0.5	0.5
School construction, renovation	11.9	…	…
Inclusive education system	3.2	2.4	2.4
Quality of education	11.4	1.2	1.1
School construction (EU, WB)	8.8	…	…
School seismic resistance improvement (ADB)	6.0	…	…
EDUCATION (all programs) **	**175.0**	**149.2**	**148.6**
% of state budget expenditure	**8.0%**	**7.0%**	**6.4%**
% of GDP***	**2.3%**	**1.8%**	**1.7%**

*2022 figures are from the Law on State Budget for 2022; 2023-2024 figures are from Medium Term Expenditure Program for 2022-2024.

**Refers to state budget expenditure on education.

***GDP projections are from Medium Term Expenditure Program for 2022-2024.

Source: State Budget, 2022, Government, 2021b

[11] Projected at the time of planning.

HOUSEHOLD EXPENDITURE ON EDUCATION

In 2020, household monthly per capita consumer expenditure (MPCE)[12] on education amounted to 1,950 AMD (4.0 USD), representing 4.2% of household total MPCE. In 2017-2020, the MPCE on education increased by 86.2% in nominal terms, while its share in household total MPCE rose by 1.8 percentage points (Armstat, 2021a).

The spike in spending on education occurred in 2020, since before that, in 2017-2019, the MPCE on education remained virtually flat and averaged 1,148 AMD (Armstat, 2021a). The reasons behind this surge are not clear and require further evidence (one explanation could be that the spike was due to an increase in social transfers in 2020. In addition, 2020 was an unusual year in terms of the COVID-19 pandemic and the widespread use of distance learning).

However, the surge in spending occurred only in urban areas, where the household MPCE on education increased by 103.4% in 2019-2020, reaching 2,830 AMD (5.8 USD), while in rural areas, it decreased by 5.8% in 2019-2020, reaching 693 AMD (1.4 USD) (Armstat, 2021a).

In terms of share in total household spending in 2020, the MPCE on education comprised 5.3% of total spending in urban areas and 1.8% in rural areas. Compared to the previous year, the share had doubled in urban areas, while it had remained the same in rural areas in 2020 (Armstat, 2021a).

MAJOR INTERNATIONAL PROJECTS IMPLEMENTED IN THE GENERAL EDUCATION SECTOR

The WB has traditionally been the main executor of projects in the field of education in Armenia. In total, the WB has implemented four projects:

1. Education Financing and Management Reform Project, 1998-2002,
2. Education Quality and Relevance Project, 2004-2009,
3. Second Education Quality and Relevance Project, 2009-2015,
4. Education Improvement Project, 2014-2021.

Education Financing and Management Reform Project (20M USD) aimed to:

1. improve the production and distribution of textbooks in general education,
2. build capacity for reform management in the education sector (WB, 2003).

Education Quality and Relevance Project (20M USD) aimed to:

1. provide a more relevant and inclusive general education curriculum and framework for evaluating the performance of the education system,
2. establish computer labs in about 600 schools,
3. train teachers to bring their teaching in line with the new national curriculum and assessment framework (WB, 2010).

Second Education Quality and Relevance Project (18.5M USD) aimed to:

1. increase the school readiness of poor and vulnerable children,
2. develop a national system for the professional development of teachers,
3. support for the integration of ICT in the educational process,
4. support for the implementation of high school reform (EV Consulting, 2015).

Education Improvement Project (28.7M USD) aimed to:

1. improve school readiness,
2. improve physical conditions of upper secondary educational institutions (EV Consulting, 2021).

Under the school readiness component, micro-project grants were provided to 136 community-based preschools (15% of all preschools operating in Armenia in 2019). Grant support included the establishment of a preschool class in the selected community school and the provision of furniture, equipment, and educational literature. In total, 13,580 children were enrolled in these preschools from 2015 to 2020, covering about 6% of children entering first grade in a given year.

Under the physical condition component, 13 high school institutions have been rehabilitated.

As part of the project, the curricula of six general education disciplines have been revised, and a system for evaluating learning outcomes at the level of primary education has been introduced.

[12] A household monthly per capita expenditure is the total consumer expenditure over all items divided by household size and expressed on a per month basis

Thus, in total for the period from 1998 to 2021, the WB implemented projects in the field of general education in the amount of about 90M USD.

The ADB is currently implementing an 88.5M USD project (with an additional 18.5M USD co-financed by the Armenian government) to improve and strengthen at least 46 schools, as well as strengthen seismic disaster preparedness and response capacity (ADB, 2022).

> Over the past two decades, more than $200 million worth of multilateral projects have been implemented in the field of education

The WFP has been implemented a school feeding program in Armenia since 2012, at one point providing meals to over 100.00 primary school children once per school day. The program is financed by the Russian Federation (in 2020, the cost of the program was 5M USD (MoESCS, 2020b)). Beginning in 2017, the program has been gradually transferred to the Armenian Government (WFP, 2021b).

PUBLIC PER STUDENT EXPENDITURE BY LEVEL OF EDUCATION

This sub-section discusses the government per student expenditure in pre-primary, primary, and secondary education.

> In 2021, real spending per student in both primary and secondary education was lower than in 2016.

In 2021, the Armenian Government spent 232K AMD per student on primary and secondary education, broken down as 215K AMD per primary student, 230K AMD per lower secondary student and 280K AMD per upper secondary student (Table 27).

Per student expenditure on compulsory education in 2021 was equivalent to 9.9% of GDP per capita, down from 13.9% of GDP per capita in 2016.

From 2016 to 2021, public expenditure on primary and secondary education decreased by 0.6% per year in real terms (Table 24), meanwhile, the number of students in primary and secondary public schools increased by an average of 2.3% per year (Armstat, 2022). This translated into an average reduction of 2.8% per year in real terms in per student public spending in primary and secondary education (Table 27).

For the same period of 2016-2021, the growth of real GDP per capita was 3.5%, while the growth of general government final consumption expenditure on a per capita basis in real terms was 4.8%. The latter points to the expansion of the government's space to step up the spending on education.

In pre-primary education, real public expenditure increased by 5.1% per year in 2016-2021, while the number of students increased by 2.5% per year, resulting in a real increase of 2.5% per year in per student expenditure (Table 27).

TABLE 2-7 GENERAL GOVERNMENT EXPENDITURE ON EDUCATION PER STUDENT, 1000 AMD, 2016-2021

EDUCATION LEVEL	2016 current	2016 constant*	2021 current**	CAGR in 2016-2021***
Pre-primary	237	270	306#	2.5%
Primary	193	220	215	-0.5%
Secondary	265	302	244	-4.2%
Lower secondary	246	280	230	-3.9%
Upper secondary	328	374	280	-5.6%
Primary & secondary	235	268	232	-2.8%

*At 2021 prices. **Based on the number of students reported in the draft state budget for 2022. ***2021 at current prices compared to 2016 at constant prices. # Based on the estimated amount of communities' expenditure on pre-primary education.

Source: Government, 2022; MoTAI, 2022

In primary education, real public expenditure increased by 0.3% per year, while the number of students increased by 0.7% per year, resulting in a real decrease of 0.5% per year in per student expenditure.

In lower secondary education, real public expenditure decreased by 1.7% per year, while the number of students increased by 2.2% per year, resulting in a real decrease of 3.9% per year in per student expenditure.

Meanwhile, in upper secondary education, as the number of students increased by 6.6% per year in 20162021 and real public expenditure increased by 0.6% per year, real per student expenditure decreased by 5.6% per year, the fastest rate of decline.

Thus, while per student real expenditure in pre-primary education has increased, it has decreased in both secondary and primary education.

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CHAPTER 3:

ANALYSIS OF POLITICO-INSTITUTIONAL MACRO-LEVEL CONTEXT AFFECTING POLICYMAKING IN THE EDUCATION SECTOR

THE INSTITUTIONAL SYSTEM OF THE MINISTRY OF EDUCATION, SCIENCE, CULTURE AND SPORTS

The authorized body of state administration of education is the MoESCS. Until 2019, the Ministry was called the Ministry of Education and Science and was responsible for the development and implementation of state policy in the field of education and science.

In 2019, three ministries: (a) the Ministry of Culture, (b) the Ministry of Sports and Youth Affairs and (c) the Ministry of Education and Science were reorganized into one ministry, which is called the Ministry of Education, Science, Culture and Sports (MoESCS) (Law on Amendments and Additions to the Law on the Structure and Operation of the Government, 2019).

This reorganization was implemented in the context of reducing the total number of ministries and streamlining the management system. Structural changes increased the load of the unified ministry, as three ministries implementing state policy in different areas were merged into one, but opportunities also arose to manage education, science, culture, sports, and youth affairs more holistically, reducing interdepartmental bureaucracy.

The MoESCS is headed by a minister who is appointed by the President of the Republic of Armenia on the proposal of the Prime Minister. The post of minister is political.

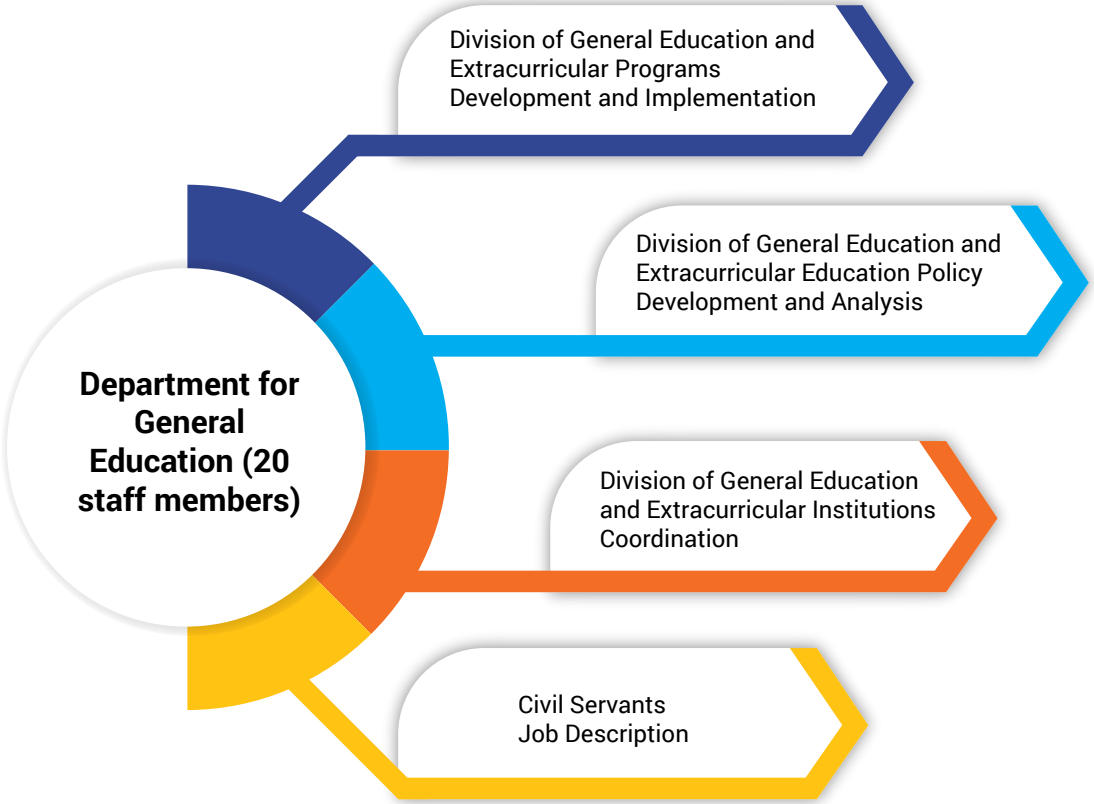
The minister has six deputies, three of whom oversee education. One of them coordinates general education, as well as preliminary (craftsmanship) and vocational education and training, the second coordinates higher and postgraduate education, and the third coordinates international cooperation programs. Deputy ministers are appointed by the prime minister. The position of Deputy Minister was previously considered discretionary, but according to the Law on Civil Service adopted in 2018, it became a political position.

The unified MoESCS has 11 principal structural units (MoESCS Statute, 2019). Previously, the three separate ministries together had 18 principal structural units. The MoESCS also has 11 supporting structural units (instead of the previous 12). The supporting units perform staff management, legal, accounting, and similar functions and are directly accountable to the Secretary General of the Ministry, who is a civil servant.

Of the 11 principal structural units, only the Department for General Education deals exclusively with general education. In 2020, this department

was transformed to include extracurricular education, as well (Figure 3-1).

FIGURE 3-1 GENERAL EDUCATION ADMINISTRATION STRUCTURE IN THE MoESCS



Source: MoESCS Statute, 2019

Until 2020, the Department for General Education and the Department for Military-Sportive and Extracurricular Education were functioning separately within the Ministry. Currently, the unified Department for General Education has 3 divisions: (a) general and extracurricular education program development and implementation, (b) general and extracurricular education policy development and analysis, (c) coordination of general and extracurricular education institutions. The first division was formed through the merger of the division of preschool and secondary education policy development and analysis, and the division of preschool and secondary education. The other two divisions were newly formed. Thus, the Department for General Education currently has three divisions instead of the previous two (MoESCS, 2020c).

According to a representative of the MoESCS, the purpose of merging the departments of general and extracurricular education was to bring formal and non-formal education closer, to attach greater importance to extracurricular education, to recognize its results, and to strengthen the extracurricular component in schools. The word "preschool" has been removed from the name of the Department for General Education, as preschool education is now considered part of general education.

> As a result of recent structural changes, the MoESCS has moved to the joint management of general and extracurricular education

The Department for General Education has 20 employees. Each division has one specialist responsible for issues related to extracurricular education, and one specialist for preschool education. Others are responsible for general education. The department has a head and three heads of divisions.

All civil service positions have a passport (with a workplace description). The passport describes

the functions, rights, duties, and responsibilities of a civil servant. It also describes the professional knowledge and competences required for the effective performance of their functions.

The functions of the department's employees are not divided into narrow specializations. From the standpoint of increasing the efficiency of the department, it is recommended that staff coordinate operations at a regional, sectoral, or institutional level. For instance, each staff member may specialize in coordinating education in a particular region or the activities of a particular agency (e.g., ATC, NCET, etc.).

Table 3-1 Brief description and primary functions of agencies providing services to the MoESCS

Institution	Brief description and core functions
Assessment and Testing Center (ATC)	The Center is a state non-commercial organization that conducts state centralized final exams, basic school final exams, national reviews, and analysis of external evaluations of education institutions. It coordinates Armenia's participation in international assessment studies, develops exam tests for voluntary attestation of teachers.
National Center for Education Development and Innovation (NCEDI)	It has been operating since 2021, and is the legal successor of the "Sustainable School Food" foundation. Content-wise, NCEDI continues the functions of the National Institute of Education (NIE). It also includes the National Center for Vocational Education and Training Development (NCVETD), which deals with the content issues of vocational education.
National Center of Educational Technologies (NCET)	The Center is a state non-commercial organization, that maintains administrative registers of the education sector, and implements e-governance, ICT content development and distance learning programs.
Republican Pedagogical-Psychological Center (RPPC)	The center is a state non-commercial organization, which provides pedagogical and psychological support services and coordinates the activities related to the introduction of the universal inclusive education system.
Center for Education Projects	The center coordinates the implementation of WB loan programs.
Textbook and ICT Revolving Fund (TICTRF)	The fund coordinates the organization of textbook competitions, as well as textbook publication and distribution.
Education Inspection Body (EIB)	The EIB is accountable to the Government and performs oversight functions and imposes sanctions in the field of education.

The problems of managing extracurricular education are much more obvious. Five institutions of extracurricular education operate under the supervision of the Department for General Education. Several sports facilities are managed by the Department for Sports Policy, and some institutions of extracurricular education are managed by the Department for Cultural Heritage and Folk Crafts. At the same time, most extracurricular facilities are managed by the communities. In this regard, the activities of the general education, culture, and sports departments of MoESCS need to be clarified.

In addition, the statute of the Department for Sports Policy states that the department coordinates the development of standards for the "Physical Education" subject in schools and monitors the teaching process. However, the development of school subject standards in Armenia is carried out by specialized working groups, and not by the MoESCS.

The Department for Development Projects and Monitoring is also involved in general education. The department has 10 employees, three of which exclusively deal with issues in the field of education. The other three employees are only

partially involved in education-related issues.

The Licensing Agency is one of the principal structural units of the MoESCS in the field of general education. Two divisions are functioning within the agency: (a) Licensing and (b) Monitoring and Analysis. The agency is guided by the Law on Licensing and the Government Decree on Approval of Licensing Procedures for Implementation of Educational Programs (Government, 2009).

All principal structural units of the MoESCS have a statute, which defines the goals, tasks, functions, and structure of the given unit.

The MoESCS outsources some principal services to specialized agencies (Table 3-1).

The MoESCS mainly carries out the process of educational policy development, and the regional administrations ensure the implementation of that policy in the territory of the region.

When the first stage of education reforms began in 1999, the approach implied that the Ministry of Education was primarily responsible for the strategic management of the system, and the territorial and self-governance bodies were implementing the management of schools and kindergartens. During those years, several educational complexes, as well as special schools remained under the auspices of the Ministry.

However, this approach did not bring the desired results, as, according to the expert opinion, the Ministry did not form strategic, long-term planning capacities, and the regional administrations were not able to develop local capacity to implement local educational policy.

In each regional administration there is a Department of Education, Culture and Sports, which implements the territorial policy of the Ministry. According to the Law on Territorial Administration, the regional governor has the following authorities in the field of education:

1. Implements general education programs in regional state educational institutions.
2. Organizes the operation of regional state educational institutions.
3. Ensures the construction, maintenance and operation of regional educational institution buildings.
4. Carries out monitoring of the situation in the field of education (Law on Territorial Administration, 2019).

The Department of Education, Culture and Sports in each regional administration has a separate division of education, with generally five to six employees.

> Regional authorities, which have the power to approve school budgets, often use their powers to interfere in school staff recruitment issues, creating corruption risks.
>
> ***Independent expert***

The MoESCS statute mentions nothing about working with regional educational authorities. The only point included is that the Ministry should contribute to the balanced territorial development of education, science, culture, and sports (MoESCS Statute, 2019). In this regard, it is important to improve the competences of the MoESCS specialists who work with the educational departments of regional administrations.

> I do not think it is right that high schools have come under the control of the Ministry. The Ministry does not have that many resources to deal with the direct management of schools.
>
> ***Independent expert***

The MoESCS does not analyze the implementation of the territorial education policy and there is no differentiated approach to the regions. There is not enough clarity on how regional governors carry out their monitoring functions in the field of education.

Until recent structural changes in the MoESCS, each employee of the Department for General Education coordinated the work of only one regional Department of Education. There is currently no such practice.

According to the Law on Local Self-Government, the Head of the Community organizes the implementation of preschool and extracurricular education in the territory of the community, as well as organizes and manages the activities of schools and preschool institutions (Law on Local Self-Government, 2002).

As part of the community consolidation reform, the involvement of communities in school management is planned to expand. Currently, full or partial transfer of powers of the regional governor in the field of education to communities is being considered. However, there is a significant risk that capacity building for education management at the community level will be more challenging than at the marz level.

School principals that took part in key expert interviews stated they lacked autonomy in decision making. They noted that, though legal provisions give autonomy to schools, not all principals utilize this.

> Schools subordinated to the Ministry have more autonomy than schools subordinated to the regional administrations.
>
> ***Key Informant***

In 2009, when separate high schools were established under the subordination of the MoESCS, the Ministry again began dealing directly with the management of a large number of educational institutions. Later, the Ministry introduced the certification requirement of school principals, which further increased the Ministry's direct involvement in the school management process.

The MoESCS adopted the approach of outsourcing essential services. Previously, the teachers' training was carried out by the NIE, which had 400 employees. Following the dissolution of the NIE in 2019, the newly created NCEDI Foundation has a significantly smaller staff (72) and does not conduct extensive teacher trainings. In addition, NCEDI does not have branches in the regions, unlike the NIE.

> The fact that the Ministry does not have enough human resources for direct management of schools also had a positive effect. High schools are free from micromanagement, in contrast to basic and secondary schools.
>
> ***Key expert***

The training of teachers and principals is conducted by third parties, which are selected through an open competition. In this case, the MoESCS and NCEDI perform supervisory, monitoring, and evaluation functions.

It is unclear how the NCEDI is going to contribute to the creation, distribution and institutionalization of innovation, as the latter requires much effort and financial resources. Meanwhile, neither the budget nor the human resources of NCEDI are sufficient for such purposes.

The statute of the NCEDI contains a provision on supporting the Bologna process in the field of higher education. However, the NCEDI does not have organizational competencies and specialized units in higher education (NCEDI Statute, 2022).

In the last two decades, the number of agencies adjacent to the Ministry has significantly increased. The functions of these organizations intersect on many issues. For instance, both ATC and NCEDI are involved in assessment-related issues. The statute of the ATC states the following functions:

- Developing assessment criteria for evaluating knowledge, capabilities, and skills, as well as providing mechanisms and tools for their implementation.
- Providing materials and tasks for the assessment of students' knowledge, skills and capabilities.
- Providing methodological assistance to the teachers to ensure efficient implementation of new assessment forms in the educational process.
- Conducting audits on national and international levels to assess the knowledge, skills, and capabilities of students (ATC Statute, 2004).

In parallel, NCEDI has a Department for Assessment Design and Development and the NCEDI statute states that it must support the coordination of national and international reviews of student progress assessment (NCEDI Statute, 2022). In addition, NCEDI develops various assessment tools for schools. Apparently, the statutes of these institutions contain overlapping functions that should be clearly separated.

In the context of textbook standards development and review, the functions of the TICTRF and NCEDI also need to be clarified. There are also some similarities in the measurement of educational outcomes between the ATC and EIB. All

this can have a positive effect if organizations cooperate closely on similar functions. An instructive example is the memorandum signed in 2022 between the RPPC and the NCEDI on a clear delineation of roles and responsibilities between the two institutions in the area of special education needs.

Generally, it is quite challenging for the Ministry to coordinate the operations of such a large number of institutions. For example, in Lithuania, to address this issue, the National Agency for Education was established by merging the Education Development Centre, National Centre for Special Needs Education and Psychology, Education Supply Centre, National Examination Centre, Centre of Information Technologies in Education, and National Agency for School Evaluation (NSA, 2022).

The introduction in 2021 of the administrative register of the education sector, which is maintained by the NCET (MoESCS, 2021d; EMIS, 2022), is a revolutionary step in the process of developing and implementing education policy. The EMIS has been widely implemented, especially in the field of general education. The range of functions of the EMIS is continually expanding. Electronic journals have been launched, and the transfer of students from school to school, from region to region, is recorded. Starting from 2022, school graduation documents will be issued electronically. In addition, EMIS was integrated with the databases of the Police and the Unified Social Services, which made it possible to more efficiently manage the system.

The EMIS operations were evaluated positively by the interviewed experts and key informants. Information about the education system has become more accessible both at the central and regional levels of government, which makes evidence-based management of general education possible, although much remains to be done. It is not always clear what information the Ministry and other bodies need, and the culture of using data should be developed. However, there are examples of EMIS data use in the recent documents of the MoESCS, particularly in the State Program of Education Development until 2030 (Government, 2022b), though this practice is not yet sufficiently institutionalized.

The MoESCS does not publish reports and does not have a feedback mechanism to inform schools about their comparative position in the country's general education system. During the expert interviews, opinions were expressed that the provision of data within the framework of the EMIS is often considered an additional concern and a bureaucratic requirement by the schools. As a result of this reasoning, school authorities believe they have done their job by simply providing the data.

Insufficient attention is paid to the analysis of Armenia's results in international assessments that monitor trends in student achievement. One of the ATC's responsibilities is to analyze the results of international and national assessments. An observation of the ATC website (atc.am) shows that although regular analysis of the results of national assessments is performed, the analysis of the results of the Trends in International Mathematics and Science Study (TIMSS) is delayed or not performed at all.

Armenia last participated in TIMSS in 2019, but there is no analysis of the results as of May 2022. Due to the lack of analysis, it is not clear to stakeholders what the trends are in student achievement and how effective Armenia is in teaching mathematics and science. Moreover, even when there is analysis, they do not receive proper attention.

EMIS has made the activities of educational institutions more transparent, making the achievements and shortcomings of schools more visible to the MoESCS and other stakeholders. This high level of transparency should be used by the Ministry for more targeted interventions.

THE CHANGE PROCESS IN EDUCATION

Over the past 30 years, the Armenian educational system has been in a process of constant change. As the "State Program of Education Development until 2030" states, "there are many problems related to the accessibility, quality, and efficiency of education that require radical solutions" (Government, 2022b).

There is no sufficient analysis of why the changes do not bring the desired result. Society often views changes as the reason for the decline in the quality of education. In public discourse, there are opinions that the introduction of 12-year education, the establishment of separate high schools, the changes in the management system, and the inefficient training of teachers are the main reasons for failures (OSF, 2015). In

the framework of the expert survey, the opinion that the education system is tired of changes as it creates certain fears and risks for people is prevalent.

An analysis of the changes made in previous years indicates a lack of consistency in their implementation. This is due to a lack of strategic vision as well as frequent changes in government, which affects policy continuity. In fact, the Ministry had no theory of change. The changes were mainly carried out from top to down according to the following logic: a certain concept was developed and approved with funds, usually from a grant or loan, then, based on this concept, structural changes and trainings were carried out, and the results were expected to be as intended.

Changes usually did not have an institutional basis. That is, they were mainly related to specific individuals and did not have a sufficient number of carriers within the system. As a result, few changes have achieved the intended results.

There is no coherent logical framework for implementing changes. Some changes are tested, such as the establishment of high schools, or the introduction of new subject standards. Some changes are introduced in stages, as with inclusive education and the school meal program. Some changes are made without testing, such as the changing of the school management system.

The MoESCS is doing a lot of work to introduce legislative and sub-legislative changes. Fundamental changes have been made to the laws on Education, on Preschool Education, and on General Education. Numerous by-laws have been developed. Some changes stem from the existing problems in the education system and are positively perceived by stakeholders. Meanwhile, the changes do contain significant risks, as they require a team of implementing professionals and serious financial investments.

Currently, Armenia is embarking on a new round of educational changes, in which changes are expected in three directions.

The first direction is the introduction of general education standards based on competencies (Government, 2021f). Part of the standards has been piloted in all schools of Tavush since 2021. As part of this reform, students will not receive marks until the second semester of the 5th grade. Student assessment will be conducted by a formative approach. There will be no failing grades at the school, and all students will be transferred to the next grade.

The competency-based approach is aimed at achieving a higher level of learning by students. Schools will have more autonomy in choosing what content to teach. In high schools, students will have the opportunity to compile their own curriculum.

The second direction is the introduction of a new management system in general education schools (Law on General Education, 2022). The education institution will be managed by an executive body comprised of the school principal responsible only for pedagogical issues, and a coordinator in charge of administrative issues. Several small schools may have a single coordinator. In some cases, the coordinator's function may be outsourced to private organizations. The school board will review development programs of candidates for the post of principal. The school board will not elect the school principal but will have the right to no confidence vote against the school principal.

The third direction is the introduction of professional standards for teachers and a voluntary attestation system (Government, 2022c). For teachers who have passed voluntary attestation, a base salary of 200.000 AMD will be set above which bonuses will be added, based on the attestation results. If the highest attestation threshold is exceeded, and the highest qualification level is obtained (MoESCS, 2013), the teacher's monthly salary can reach 400.000 AMD.

STRATEGIC PLANNING IN EDUCATION

Strategic planning in the field of education is based on three documents:

- State Program of Education Development.
- Government Program (the current program was adopted for 2021-2026).
- MTEP (outlines financial planning for the next 3 years).

The State Program of Education Development which is approved by the National Assembly is the basis of the education policy. In general, sectoral development strategies, as well as the country's development strategy, are approved by the government. Whereas the State Program of Education Development is the only sectoral strategy which is subject to approval by the National

Assembly.

Some experts believe that the approval of the program in the National Assembly is justified, as it provides stability and protects the document from various political upheavals.

> There is no consensus among experts on which body should adopt the State Program of Education Development, the Government or the National Assembly

Other experts, however, believe that the approval of the program in the legislature creates excessive rigidity, since it deprives the MoESCS of flexibility in making necessary adjustments. At the same time, it does not protect the document from political changes. After all, the current Constitution of Armenia guarantees the government a stable majority in the National Assembly (Constitution, article 89, 2015), and any government can submit a new program to the National Assembly.

The first state program of education development was adopted for the period of 2001-2005 (Government, 2001). At the end of the period, it was decided to prepare an even more ambitious program. However, the adoption of the program took about six years, and from 2006 to 2010, the Armenian education system functioned without a development program.

The second program was adopted for the 2011-2015 period, which, like its predecessor, was not implemented for the most part (Government, 2011).

The third program was supposed to begin operation in 2016. However, in this case, too, there were long delays. Several options were developed but none of them made it to the government. Only at the beginning of 2022, the MoESCS presented a draft for the State Program of Education Development until 2030 (Government, 2022b).

The draft State Program of Education Development until 2030 sets multiple ambitious targets (Government, 2022b). In particular, in primary and secondary education, the following targets are set to be achieved by 2030:

- Ensure that all schools have state-of-the-art and universally accessible buildings.
- Achieve 100% enrollment in primary and secondary education.
- Increase learning-adjusted years of school from the current 8.3 years to 11.5 years (factoring in what children actually learn during 12 years of education).

Expert interviews showed that one of the problems in designing a development program is the lack of institutional capacity in MoESCS. The Ministry, being overburdened with current issues, is not able to allocate enough time and resources to the development of a long-term program.

The 2021-2026 Government Program sets the priorities of education and their targets (Government, 2021). In addition to the program, an action plan is adopted, which indicates the goals, measures, expected results, deadlines, sources of funding, and size. Annual reports are published during the implementation of the program. The 2021 report has already been published with an important innovation introduced. Not only the results of the program implementation are mentioned, but a separate column explains why the program was not implemented or was not implemented within the set timeframe (Government, 2021e).

The MTEP describes state programs implemented in the field of education and their funding. This document sets the budget request, the proposed programs relate to the government's strategic documents, the Sustainable Development Goals. Justifications and financial calculations are provided for the newly proposed programs.

DEFINING POLICY GOALS IN STRATEGIC DOCUMENTS

The MTEP for 2020-2022 set the target to increase the average scores of the Unified State Examinations in Mathematics and Armenian Language and Literature from 11 and 12.9 points, respectively, to 15 points in 2021 (on a 20-point scale) (Government, 2019). However, these targets were not achieved, as in 2021 the average score in Mathematics was 10.4 points, and in Armenian Language and Literature, 12.3 (ATC, 2021). An obvious question is how the Government was going to achieve these targets, if there were no radical changes in upper secondary education that would improve performance in these subjects.

The MTEP for 2020-2022 also set specific targets to improve Armenia's score for the Quality of the Education System in Global Competitiveness Re-

ports, as well as Armenia's score in TIMSS. However, it is still unclear how these results should have been ensured.

One of the targets set concerns the voluntary attestation of teachers, which is planned to cover 45% of teachers by 2023. In 2021, fewer than 10% of teachers participated in the voluntary attestation.

The 2022-2024 program aims to increase the proportion of primary school students with at least a minimum level of reading and math proficiency from about 87% in 2019 to 100% in 2024 (Government, 2021b, p. 98).

In parallel, there is neither a discourse about unachieved goals nor discussions to reveal the reasons for the failures. Documents adopted by the government stipulated that, in 2021, Armenian schoolchildren should participate in the Programme for International Student Assessment (PISA). Earlier, government documents also mentioned participation in the Progress in International Reading Literacy Study (PIRLS). However, no explanation has been given so far as to why Armenia did not participate in PIRLS 2021, while only 4th graders participated in TIMSS 2019, although in previous TIMSS cycles, when Armenia took part, 8th graders were also participated (TIMSS, 2022).

THE MINISTRY'S COMMUNICATION AND COOPERATION WITH STAKEHOLDERS

The Ministry has had a communication strategy for the period of 2011-2015 but no such strategy is in effect today.

The e-Draft electronic platform allows stakeholders to easily become informed about the proposed changes in normative documents. The public can also submit suggestions or remarks, to which the Ministry is obliged to respond, either accepting or rejecting them with good reason. While the role of electronic platforms in the communication process is clearly positive, the operation of direct communication platforms is still important, since direct communication can facilitate the cooperation of the Ministry with the public.

Interviews with key informants suggested the MoESCS is usually open to cooperation proposals. The number of organizations that implement programs in formal education has significantly increased. Teach for Armenia implements the "Generation" program, for example, within the framework of which school mentoring is provided. Children of Armenia Fund implements the "English-Speaking Villages" program in 24 schools, through which English is taught in schools. The state also funds the ArMath Engineering Laboratories education program, implemented by the Union of Advanced Technology Enterprises (UATE).

Such grassroot projects create great opportunities for development but should be regularly monitored and evaluated to understand their effectiveness and allow best practices to be disseminated to other schools. As important as private initiatives are, an overload on schools and children with ineffective programs is also dangerous.

In 2022, for the first time, non-governmental organizations operating in the field of education have been invited to discuss the 2023-2025 MTEP and the 2023 budget request of the MoESCS (MoESCS, 2022). Civil society, together with development donors, also participated in the discussion of the draft State Program of Education Development until 2030 (MoESCS, 2022d).

STUDENT AND PUBLIC COUNCILS

There are two advisory bodies under the Minister of Education, Science, Culture and Sports (ESCS), allowing stakeholders to engage in dialogue with the Ministry: the Student Council and the Public Council.

The Student Council's stated goals are to promote the selforganization and self-expression of students, support the realization and protection of students' rights, support the development of civil society.

> There is a challenge of increasing the efficiency of the work of student and public councils, with their active involvement in policy development

The Student Council Board consists of 45 members and is comprised of students from grades 8 to 12. The Chairman of the Board is the Minister of ESCS. The Board serves for a period of one year and meetings are convened at least twice a year, though Board decisions are advisory in nature (MoESCS, 2022b).

The Public Council under the Minister of ESCS is an advisory body chaired by the Minister and consists of 34 members. It may include non-government organizations, mass media, national minority organizations, as well as persons whose activities are in line with the activities of the MoESCS. Once every two years, one-third of the board members are rotated (MoESCS, 2022c).

The minutes of the meetings of the councils, as well as the annual reports of the councils, are published on the MoESCS website.

SCHOOL BOARDS

The school boards are an important tool for ensuring participatory school management, as they involve parents, teachers, and representatives of national, regional, and local governments. School boards are comprised of nine members, two of whom are teachers and two are parents.

In schools under the jurisdiction of the MoESCS, four members are appointed by the Minister of ESCS, and one by the Mayor (in Yerevan) or by the Governor (in the marzes). Whereas in schools under the jurisdiction of regional administrations (including Yerevan), four members are appointed by the Mayor (in Yerevan) or by the governor (in the marzes, where two of the four members are nominated by the head of the local self-government body). The appointed school boards serve for three years (MoESCS, 2021e).

> There is a lack of participatory culture. Many members of our organization ended up on school boards after the 2018 revolution. However, there were no significant changes in the operation of the school boards. That is why most of the members of our organization recently turned down the offer to again join the Boards.
>
> ***Independent expert***

This structure allows the general public to get involved in the school management. However, the activities of school boards are not sufficiently efficient, which is also acknowledged in the draft State Program of Education Development until 2030: "The introduction of school boards was a crucial step but did not have a decisive effect. In many cases, school boards play a formal role, with decisions being made either individually or by directives" (Government, 2022b).

Currently, the school board elects the school principal (MoESCS, 2021e). With the new legislative changes, which will come into force in 2023, the school board will not be involved in the election of the principal but can instead express a vote of no confidence in the principal by two-thirds of the votes (Law on General Education, 2022).

> One of the reasons for the lack of effectiveness of school boards is that most of the board members do not have the necessary knowledge and skills. Training courses are not provided for them.
>
> ***Independent expert***

Overall, improving the work of school boards remains a significant challenge, especially since school board members are not paid for their work and have no direct financial motivation.

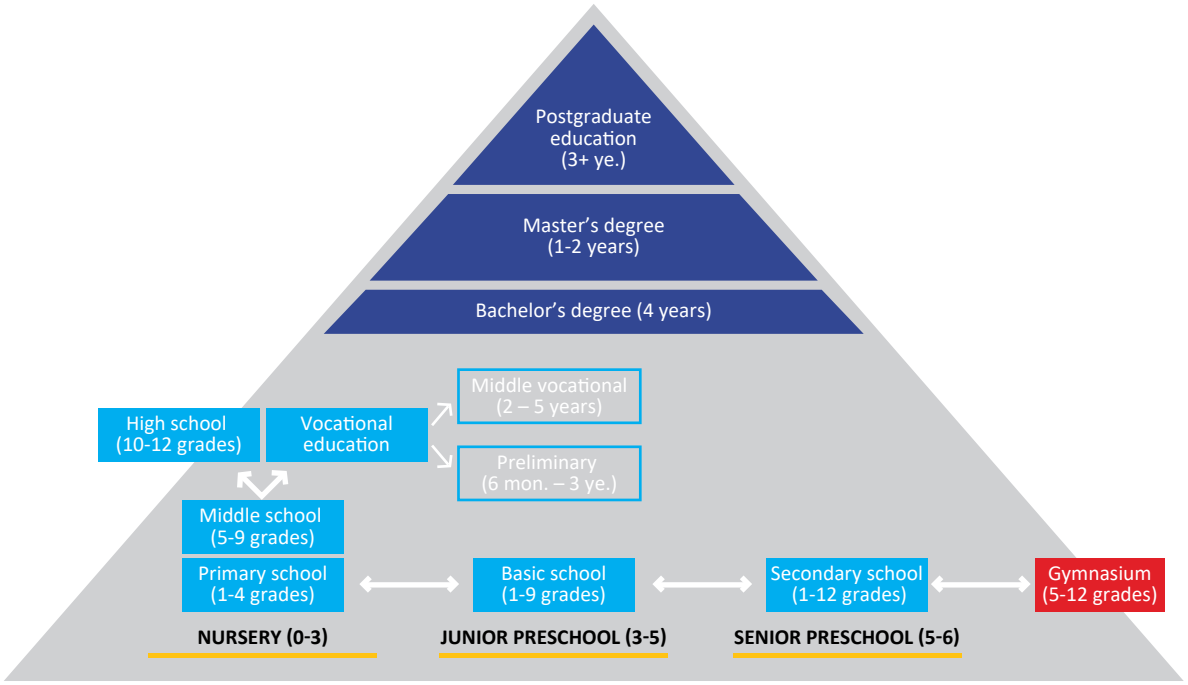
CHAPTER 4:

ANALYSIS OF SCHOOL (PRESCHOOL) ENROLLMENT, SCHOOL (PRESCHOOL) COVERAGE, AND INTERNAL EFFICIENCY WITH A FOCUS ON SOCIAL EQUITY

The goal of this chapter is to assess the extent to which the general education system meets the needs of the population, in terms of supply. The dynamics of enrollment rates and school supply over the past decade are analyzed to determine the physical capacity of the system and identify gaps and challenges.

The Armenian education system is divided into five main cycles: preschool, primary, lower secondary, upper secondary (general and vocational) and higher education (Figure 4-1).

FIGURE 4-1 THE STRUCTURE OF ARMENIAN EDUCATION SYSTEM



Source: ESA

SECTION 4-1: PRESCHOOL EDUCATION

Four ministries are involved in the regulation and policy development of preschool education. The MoESCS oversees the development of the national policy in the field of preschool education and monitors its implementation through the Licensing Department and the Education Inspection Body. The Ministry of Health is responsible for the well-being of children attending the preschool educational institutions. The activities of the Ministry of Labor and Social Affairs are aimed at reducing poverty and creating favorable social conditions for the development of children, while the MoTAI allocates funds from the state budget to the budgets of those communities that receive government subsidies to fund their preschool institutions. (Milovanovitch & Bloem, 2020).

Public funding of preschool institutions in Armenia is provided from the community budgets, except for departmental kindergartens. The amount of funding is determined based on the enrollment of children in each preschool. With the exception of Yerevan, where the municipality provides free preschool education, kindergartens in the rest of the country usually charge a fee to cover their running expenses. These fees vary between the marzes, depending on the economic situation and the financing scheme used.

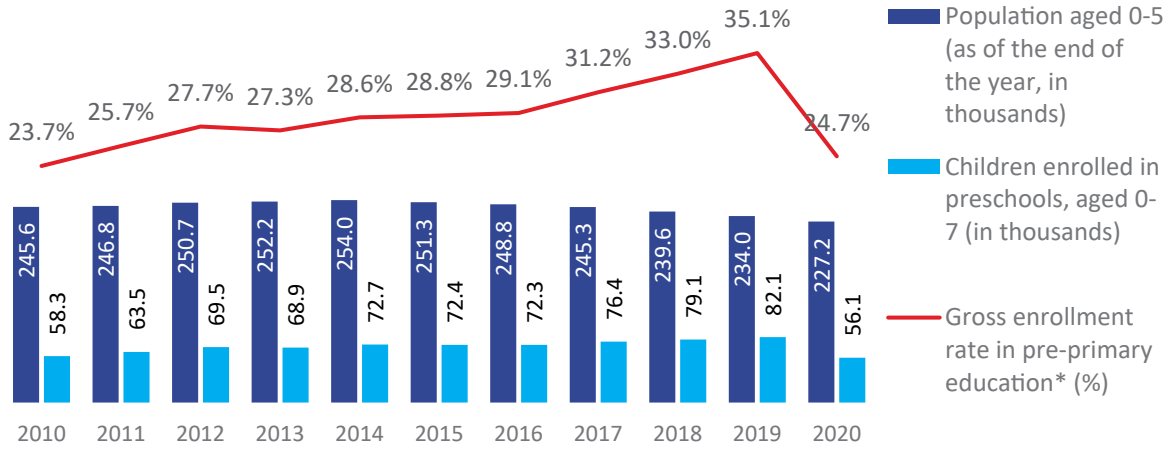
There are five types of preschool educational institutions in Armenia (Government, 2021d):

- Nursery – for up to 3 years old.
- Nursery kindergarten – for 0-6 years old.
- Kindergarten – for 3-6 years old.
- School-based kindergarten – for 5-6 years old.
- Center – for any preschool age group.

ENROLLMENT IN PRESCHOOL EDUCATION

Children who have attended early childhood education programs are more than twice as likely to be on track in early literacy and numeracy skills than children missing out on early learning. In fact, attending an early childhood education program is one of the strongest predictors of both a child's readiness for school and completion of primary education, regardless of household or national level of income (UNICEF, 2019).

FIGURE 4 -2 EVOLUTION OF PRESCHOOL ENROLLMENT IN ARMENIA, 2010-2020



*The gross enrollment ratio is calculated as the ratio of the total number of children enrolled in preschools to the population aged 0-5 years as of the end of the year. The figures differ slightly from those published by Armstat, since Armstat calculates this ratio based on the population as of the beginning of the year.

Source: ESA based on Armstat, 2022

Preschool enrollment in Armenia has improved over the past decade, with gross enrollment rising by more than 10 percentage points, from 23.7% in 2010 to 35.1% in 2019. However, 2020 saw a large setback when the enrollment rate dropped to 24.7% (Figure 4-2). The sharp decline was mainly due to COVID-19 related restrictions, as all preschools were closed during the pandemic and remained closed even when schools reopened with physical distancing measures.

During the pandemic, only a small number of preschool institutions were operating, providing services for children of doctors, nurses, etc.

> Enrollment in pre-primary education has increased by two-fifths over the past decade

The decline in enrollment was also partly caused by intensified reconstruction of preschool institutions, especially within Yerevan (MoESCS, 2021c).[13]

The rise in preschool enrollment rates over the past decade has been driven both by an increase in the number of preschool institutions and a decrease in the population of the corresponding age.

The number of kindergartens (public and private) increased by 271 (or 42.4%) during the 2010-2020 period, while the number of children enrolled in preschools (public and private) rose by 23,773 (or 40.8%) in 20102019. In parallel, the preschool age population (0-5 years old) decreased by 18,412 (or 7.5%) between 2010 and 2020 (Armstat, 2022).

The net enrollment of children aged 0-5 years old was well below the gross enrollment, as the proportion of children aged six and seven enrolled in preschools[14] was sizable, at 33.7% in 2018-2020 (Table 4-1).

Table 4-1 Net enrollment in pre-primary education, 2010-2020

INDICATORS	2010	2012	2014	2016	2018	2019	2020
Proportion of children aged 6-7 years among children enrolled in preschool institutions	29.0%	27.5%	30.0%	27.4%	33.3%	29.6%	38.1%
Net enrollment rate for children aged 0-5*	16.9%	20.1%	20.0%	21.1%	22.0%	24.7%	15.3%

*The total number of 0-5-year-old children enrolled in pre-primary education, expressed as a percentage of the total population in that age group

Source: ESA based on Armstat, 2022

Thus, in 2019, the net enrollment rate of 0-5-year-old children was 24.7%, or 10.4 percentage points lower than the gross enrollment ratio. At the same time, the net enrollment rate in 2019 increased significantly compared to 2010, when it was only 16.9%.

The majority of preschools are public, while the private ones are mostly located in Yerevan. In 2020, only 5.8% of preschools in Armenia were private, while only 3.9% of children enrolled in preschools attended private kindergartens. Apparently, this is due to the high tuition fees in private preschools.

ENROLLMENT OF CHILDREN AGED 0-2 | The enrollment trend for children aged 0-2 years has been negative over the past decade. Their net enrollment rate was 6.2% in 2010, then peaked at 7.8% in 2012 before declining steadily to 5% in 2019 (Figure 43). The decline was driven by the closure of nurseries, as the number of nursery-kindergartens fell from 243 in 2010 to 48 in 2020. Overall, the number of children under the age of three enrolled in preschool institutions (public or private) decreased from 7.900 in 2010 to 5.500 in 2019 (a decline of 30.9%) (Armstat, 2022).

> Enrollment of children under the age of three has fallen by a third in a decade

ENROLLMENT OF CHILDREN AGED 3-5 | Net enrollment of children aged 3-5 was 42.0% in 2019 against 28.5% in 2010. Meanwhile, gross enrollment, which included also six and seven-year-olds, was 61.6% (Figure 43). In absolute terms, the total number of preschool children aged three years and older enrolled in pre-primary education increased from 50.400 in 2010 to 76.600 in 2019 (an increase of 52.0%) (Armstat, 2022).

> Enrollment of preschool children aged 3

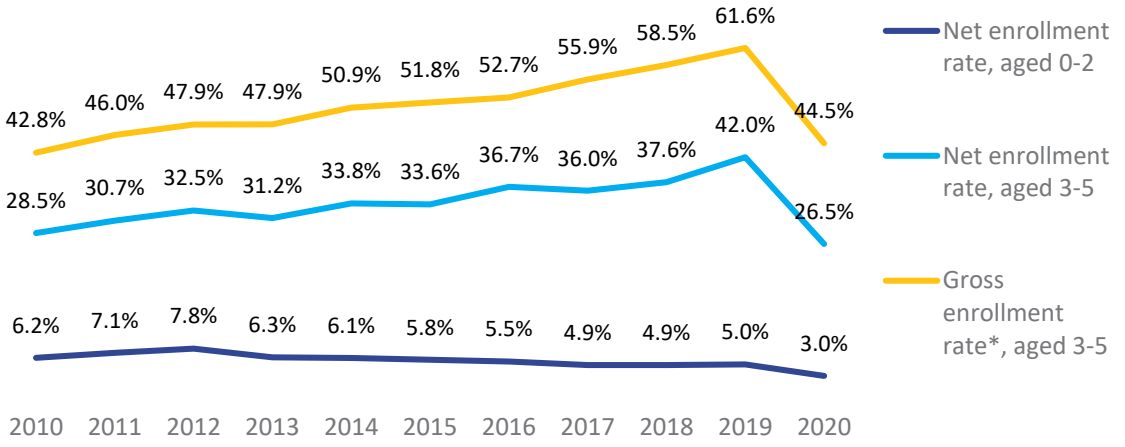
[13] In 2020, out of 161 preschool institutions, under the jurisdiction of Yerevan Municipality, 10 did not function due to renovations (Human Rights Defender, 2020). As of June 2022, 20 out of 161 did not function due to renovations (Yerevan Municipality, 2022).

[14] Children must be enrolled in primary school in the current year if they are six years old by January of the following year, otherwise they must be enrolled in the following year. Therefore, the theoretical maximum enrollment age is 6 years and 9 months.

years and over has increased by half in a decade, but still two out of five are not enrolled in preschool.

Thus, two out of five preschool children aged three years and older did not attend a preschool institution and presumably entered primary school without the necessary skills.

FIGURE 4-3 ENROLLMENT RATES IN PRE-PRIMARY EDUCATION BY AGE GROUP, 2010-2020



*Total number of children aged 3 and over enrolled in pre-primary education, expressed as a percentage of the total population aged 3-5

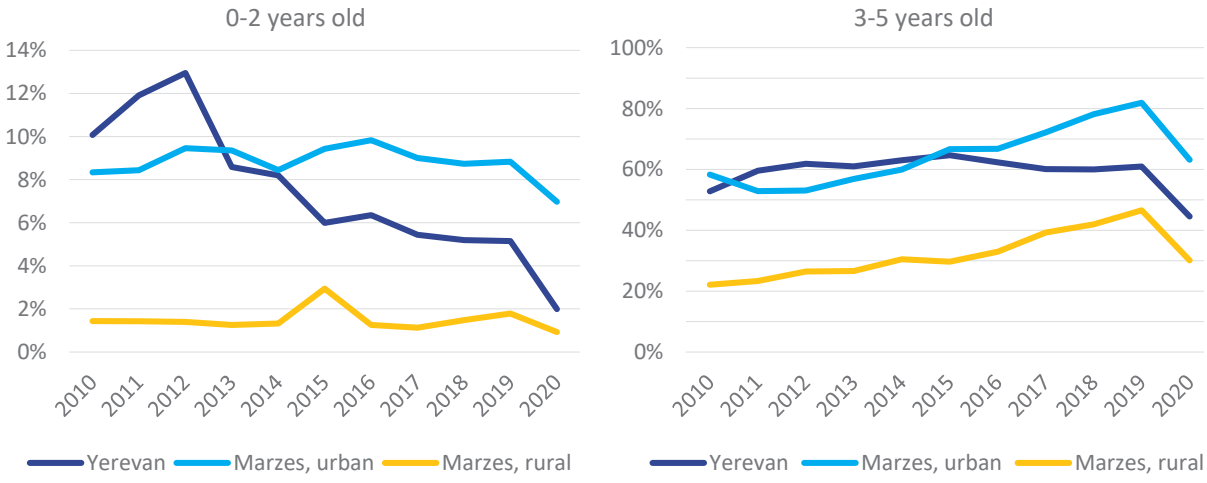
Source: ESA based on Armstat, 2022

ENROLLMENT BY TYPE OF SETTLEMENTS | In Yerevan, the gross enrollment ratio in pre-primary education was 37.1% in 2019. Broken down by type of settlements, in 2019, the gross enrollment ratio in urban settlement was 39.6%, while in rural settlements it amounted to 25.4% (Armstat, 2022).

The gross enrollment of children aged 3-5 increased by more than 20 percentage points in both urban and rural settlements of the marzes and by about 8 percentage points in Yerevan

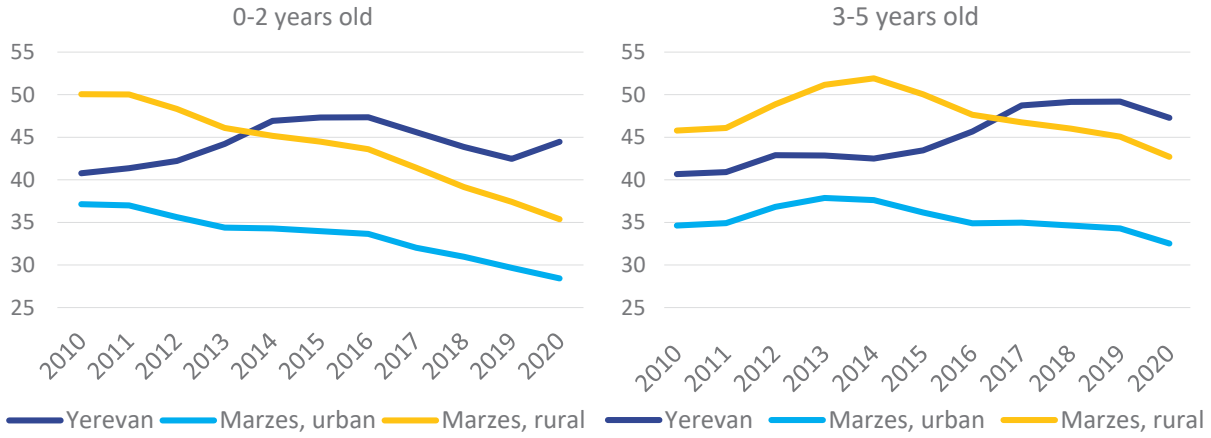
Disaggregation by type of settlements shows that the decline in the net enrollment rate of 0-2-year-olds in Armenia was mainly due to a decline in enrollment in Yerevan. In 2019, the enrollment rate of 0-2-year-olds in Yerevan was 5.1% compared to a peak of 12.9% in 2012 (Figure 44). Meanwhile, in the urban settlements of the marzes, the enrollment rate of 0-2 years old remained stable over the past decade, averaging 8.8% in 2010-2020. Thus, from 2013 on, the enrollment rate of 0-2-year-olds in Yerevan has been lower than in the urban settlements of the marzes.

FIGURE 4-4 PRESCHOOL ENROLLMENT RATE BY AGE GROUP AND TYPE OF SETTLEMENT, %, 2010-2020



Source: ESA based on Armstat, 2022

FIGURE 4-5 UNDER-6 POPULATION BY AGE GROUP AND TYPE OF SETTLEMENT, 1000 PEOPLE, 2010-2020



Source: Armstat, 2022b

Unlike the enrollment rate of children aged 0-2, the rate for 3-5 years old has been on the rise in all types of settlements. In 2010-2019, the rate for 3-5 years old increased from 52.8% to 60.9% in Yerevan, from 22.1% to 46.6% in rural settlements, and from 58.3% to 81.9% in urban settlements of the marzes.

Notably, in Yerevan, the increase in the enrollment rate of children aged 3-5 was accompanied by an increase in the population of 3-5 years old. At the same time, in urban and rural settlements of the marzes, the population of children aged 3-5 years old has slightly decreased (Figure 4-5).

The sharp difference in enrollment rates between urban and rural settlements is explained by the fact that in many rural settlements, there are no preschool institutions. According to the Human Rights Defender's annual report, there were 209 such settlements in 2020 (Table 42). Meanwhile, according to the draft Strategy for the Development of Education until 2030, as of 2022, preschool services are not provided in 229 settlements of Armenia (Government, 2022b).

Table 4-2 Number of settlements in the marzes without preschool institutions, 2020

Marz	Number of settlements	Marz	Number of settlements
Aragatsotn	93	**Kotayk**	18
Ararat	26	**Shirak**	22
Armavir	55	**Syunik**	3
Gegharkunik	9	**Vayots Dzor**	1
Lori	56	**Tavush**	15
TOTAL		**298**	

Source: Human Rights Defender, 2020

Also, because of high unemployment in rural areas, primary caregivers usually take over their children's care. Another factor is the intermission in the work of rural kindergartens during the winters.

According to a study of pre-primary education in Armenia, commissioned by UNICEF Armenia, for working parents, especially in urban communities, the importance of preschool education is largely due to the childcare that preschools provide. Meanwhile, in rural communities, there has been a shift in perceptions of preschool education, with many parents opting to send their children to kindergarten even when the extended

family can provide childcare. In general, in rural communities, the educational role of preschools appears to be prioritized over their caregiving role (UNICEF, 2022b).

ENROLLMENT BY THE MARZES | Among the marzes, the enrollment rate in preschool institutions is the highest in Syunik (54.3% in 2019) (Annex 2.4, Table 2). In 2019, the three marzes with enrollment rates higher than in Yerevan (37.1%) were Syunik, Tavush (43.6%), and Vayots Dzor (38.0%). The rate was the lowest in Gegharkunik (23.5%) and Aragatsotn (25.9%).

ENROLLMENT BY HOUSEHOLD INCOME | According to the results of the Integrated Living Conditions Survey (ILCS) 2019, the gross enrollment of children in preschool institutions was 34% and varied by household income. It was 37% in non-poor, 27% in poor, and 24% in extremely poor households. The gross enrollment in preschool education also varied across household consumption quintiles. It was 26% in the first quintile, 31% in the second quintile, 38% in the third and fourth quintiles, and 41% in the fifth quintile (Armstat, 2020).

> In poor households, enrollment of children in preschool education is consistently lower than in non-poor households

In the pandemic year of 2020, according to the results of ILCS 2020, the gross enrollment of children in preschool education was 24%, including 28% in non-poor, 16% in poor and 0.0% in extremely poor households (Armstat, 2021a).

Thus, in poor households, enrollment of children in preschool education is consistently and significantly lower than in non-poor households.

It should be taken into account that due to significant outward migration, the actual number of children living in Armenia is lower than the officially reported number, which artificially lowers the enrollment rate.

GENDER PARITY IN ENROLLMENT | In 2019, the enrollment rate of girls in preschool institutions (out of the 3-5-year-olds population, includes the enrollment of 6-7-year-olds) was 62.8%, while the enrollment rate of boys was 1.5 percentage points lower at 61.3% (Table 4-3).

TABLE 4-3 ENROLLMENT IN PRESCHOOL INSTITUTIONS (3-5 YEARS OLD), %, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	42.7	44.8	46.4	46.3	49.2	48.9	50	54.5	56.5	59.9	42.6
Female	47.6	50	52.1	49.7	52.9	54.2	55.2	58.5	60.5	62.8	44.5
Total	45	47.2	49.1	47.9	50.9	51.4	52.4	56.4	58.4	61.3	43.5

Source: Armstat, 2022

The absolute gap between female and male enrollment rates in 2010-2020 averaged 0.6 percentage points for 0-2 years old and 4.2 percentage points for 3-5 years old, with the gap steadily narrowing (Table 4-4).

TABLE 4-4 ABSOLUTE GAP BETWEEN FEMALE-MALE ENROLLMENT RATES, PERCENTAGE POINT, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0-2	1.2	0.8	0.7	0.4	0.8	1.0	0.6	0.2	0.2	0.2	0.0
3-5	4.9	5.2	5.7	3.4	3.7	5.3	5.2	4.0	4.0	2.9	1.9
Total	2.9	2.9	3.2	1.9	2.2	3.1	2.8	2.0	1.9	1.4	0.9

Source: ESA based on Armstat, 2022

The gender parity index (GPI) averaged 1.1 during 20102020 period (both for 0-2 and 3-5 age groups), while the index has been decreasing, i.e. the parity has been increasing throughout the decade (Table 45). In 2019, the GPI was close to parity, with 1.04 for the 0-2 age group and 1.05

for the 3-5 age group. Overall, boys were consistently disadvantaged in terms of enrollment (in general, boys are disadvantaged if GPI>1.03 (UNESCO, WB, UNICEF, GPE, 2014)).

The gender gap in enrollment has narrowed sharply over the past decade, approaching parity

TABLE 4-5 GENDER PARITY INDEX BY AGE GROUP, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GPI, 0-2	1.21	1.12	1.09	1.07	1.14	1.19	1.12	1.04	1.04	1.04	1.00
GPI, 3-5	1.11	1.12	1.12	1.07	1.08	1.11	1.10	1.07	1.07	1.05	1.04
GPI, total	1.13	1.12	1.12	1.07	1.08	1.11	1.10	1.07	1.06	1.04	1.04

Source: ESA based on Armstat, 2022

EQUITY IN PUBLIC FINANCING | The disparity in access to pre-primary education in favor of more advantaged groups is a concern in terms of equity in public financing.

Kindergartens are heavily subsidized by communities. Even if kindergartens in the marzes charge fees, these fees account for less than one-fifth of the total costs. The combined effect of subsidization and skewed access for better-off children results in relatively well-to-do children receiving full-time subsidized pre-primary education. This means that the subsidy is effectively regressive, even if that is not the intention. Given the lifelong effects of early childhood interventions, disparities in access risk exacerbating inequities in Armenia (Ayliffe, Honorati, & Zumaeta, 2019).

PRESCHOOL ENROLLMENT MONITORING MECHANISM | Local self-governing bodies are responsible for keeping records of preschool children. According to the Law on Preschool Education, they are also responsible for providing preschool education services.

The EMIS platform is planned to be used as an enrollment monitoring mechanism. However, there is currently no centralized data collection and monitoring tool[15]. As of May 2022, the EMIS platform already recorded the enrollment of 218 preschool educational institutions (EMIS, 2022).

SUPPLY OF PRESCHOOL EDUCATIONAL INSTITUTIONS

Over the past decade, the number of preschool institutions (both public and private) increased by 271 (or 42.4%) from 639 in 2010 to 910 in 2020, of which the number of public/private preschools increased by 251/20.

In Yerevan, the number of public preschool institutions increased by only six during the period of 2010-2020, while the number of private preschool institutions increased by 20 (according to the official statistics, in 2020, there were no private preschools in the marzes, meaning the 20 preschools were opened in Yerevan) (Table 46).

Among the marzes, from 2010 to 2020, the number of preschools increased the most in Shirak (by 62), Armavir (by 50), and Lori (by 38). Meanwhile, only four preschools were opened in Kotayk, and seven in Syunik (Annex 2.4, Table 1).

As mentioned above, according to official statistics, there were no private preschool institutions in the marzes in 2020 (Armstat, 2022). This seems controversial, since interviews with representatives of the MoESCS and EMIS showed that there are private preschool institutions in the marzes, but there is no unified database for the latter. Licensing requirements for preschool institutions, introduced in 2020, will help to get a more accurate picture of preschool education in the country.

The population aged 0 to 5 was 227,176 in 2020 (Armstat, 2022). In total, there were 84,411 places (design capacity) in 910 public and private preschool institutions in Armenia in 2020 (Table 4-7). Thus, the preschool supply was 37.2% in 2020, meaning the number of places (design capacity) in preschool institutions was less than two-fifths of the potential demand (Figure 4-6).

[15] Based on a meeting with the representatives of EMIS and an interview with the head.

Table 4-6 Number of public and private preschool educational institutions, 2010-2020

REGION	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Public, Yerevan	165	163	164	163	163	165	167	170	170	171	171
Public, Marzes	441	445	467	490	498	498	502	648	664	681	686
Total Public	**606**	**608**	**631**	**653**	**661**	**663**	**669**	**818**	**834**	**852**	**857**
Private, Yerevan	33	43	43	43	51	54	52	50	50	54	53
Private, Marzes	0	9	9	1	1	0	0	0	0	0	0
Total Private	**33**	**52**	**52**	**44**	**52**	**54**	**52**	**50**	**50**	**54**	**53**

Source: Armstat, 2022

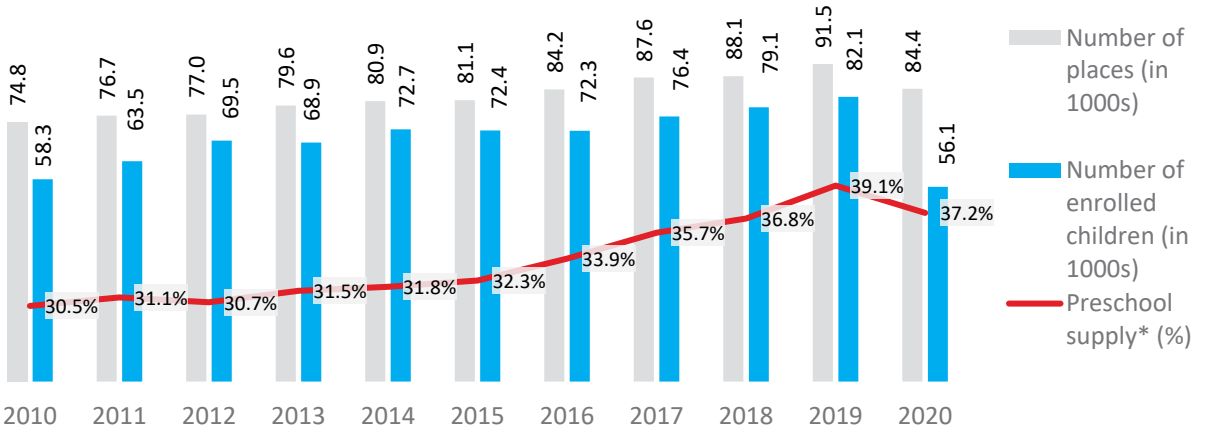
For children aged 3-5 years, who numbered 118,920 in 2020, the preschool supply was about 70% (Table 4-8). This was defined as the ratio of the design capacity for 3-5-year-olds to the population of the same age, where the design capacity for 3-5 years was estimated as the difference between the total design capacity and the number of children aged 0-2 enrolled in preschool institutions. Since the number of children aged 0-2 years enrolled in preschools was very low, the study team considered the number of enrolled children to be equal to the number of places in nurseries.

Disaggregated by regions, at the beginning of the last decade, the preschool supply in Yerevan was twice as high as in the marzes, but by the end of the decade, the rates converged (Figure 4-7).

In Yerevan, the rate declined by about four percentage points due to an increase in the population aged 0-5 years (by 12.2% from 80.300 in 2010 to 90.000 in 2020).

In the marzes, meanwhile, the rate rose by 12.4 percentage points due to a significant increase in the number of places (by 23.3% in 2010-2020) coupled with a decline in the population aged 0-5 years (by 17.0% in 2010-2020).

FIGURE 4-6 NUMBER OF PLACES, ENROLLED CHILDREN AND PRESCHOOL SUPPLY, 2010-2020



*Preschool supply (%) = total number of places (design capacity) / population (0-5)

Source: ESA based on Armstat, 2022

TABLE 4-7 NUMBER OF PLACES IN PUBLIC AND PRIVATE PRESCHOOL INSTITUTIONS, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Public	72,853	73,353	73,545	76,959	78,022	78,209	81,266	84,871	85,534	88,308	81,536
Private	1,933	3,313	3,462	2,614	2,831	2,912	2,959	2,775	2,517	3,240	2,875
Total	74,786	76,666	77,007	79,573	80,853	81,121	84,225	87,646	88,051	91,548	84,411

Source: Armstat, 2022

TABLE 4-8 PRESCHOOL SUPPLY FOR 3-5 YEAR OLDS, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of places for 3-5 years old (in thousands)*	66.9	67.6	67.1	71.7	73.1	73.8	77.4	81.8	82.5	86.1	81.2
Population aged 3-5 (in thousands)	117.6	118.4	124.5	127.5	127.7	125.5	124.1	126.2	125.6	124.5	118.9
Preschool supply (%)**	56.9	57.1	53.9	56.2	57.2	58.8	62.4	64.8	65.7	69.2	68.3

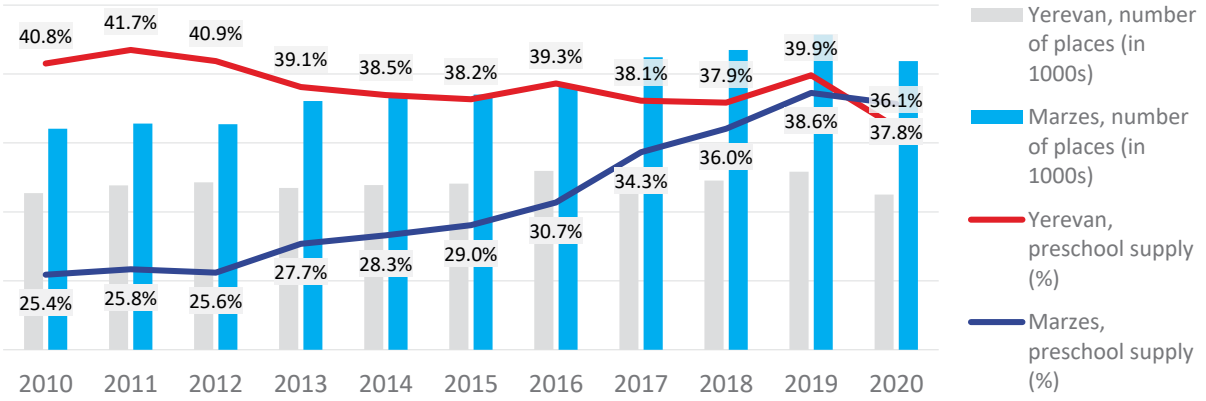
*The number of places (design capacity) for 3-5 years is estimated as the difference between the total design capacity and the number of children aged 0-2 enrolled in preschool institutions.

*Preschool supply (%) = total number of places (design capacity) / population (3-5).

Source: ESA based on Armstat, 2022

The most disadvantaged marz in terms of preschool supply was Aragatsotn, followed by Gegharkunik and Shirak. In these three marzes, in 2020, the preschool supply was on average twice lower than in Syunik, Tavush, and Vayots Dzor, where the preschool supply was highest (Table 4-9).

FIGURE 4-7 PRESCHOOL SUPPLY IN THE MARZES AND YEREVAN (0-5 YEARS OLD), 2010-2020



Preschool supply (%) = total number of places (design capacity) / population (0-5)

Source: ESA based on Armstat, 2022

In the case of Syunik, the high rate of preschool supply is explained by the sponsorship and support of preschool institutions by mining companies, which encourage people to work with them through various social initiatives.

As for Tavush, preschool educational institutions have been built in the border settlements, while Dilijan is developed in terms of infrastructures. In total, 22 new preschools were opened in Tavush over the past decade, increasing the number of preschools there by half. In Vayots Dzor, mean-

while, the number of preschools doubled to 34 in 2020 (Annex 2.4, Table 1).

As mentioned above, over the past decade, the number of preschool institutions increased most in Shirak, Armavir, and Lori, but still in these marzes the preschool supply was at or below the national average in 2020 (Table 4-9).

TABLE 4-9 PRESCHOOL SUPPLY AND LOAD IN THE MARZES AND YEREVAN, 2020

REGION	PREschools	places	Population (0-5)	Enrollment	Supply*	Load**
Yerevan city	224	32,525	90,016	23,352	36.1%	71.8%
Aragatsotn	26	2,089	9,375	1,385	22.3%	66.3%
Ararat	81	7,639	19,651	4,747	38.9%	62.1%
Armavir	106	7,122	18,437	4,069	38.6%	57.1%
Gegharkunik	60	4,535	16,722	2,672	27.1%	58.9%
Lori	95	5,799	16,345	3,951	35.5%	68.1%
Kotayk	54	7,176	19,173	4,917	37.4%	68.5%
Shirak	107	6,024	18,039	3,552	33.4%	59.0%
Syunik	56	5,129	8,251	3,903	62.2%	76.1%
Vayots Dzor	34	1,860	3,263	1,035	57.0%	55.6%
Tavush	67	4,513	7,904	2,550	57.1%	56.5%
Total RA	**910**	**84,411**	**227,176**	**56,133**	**37.2%**	**66.5%**

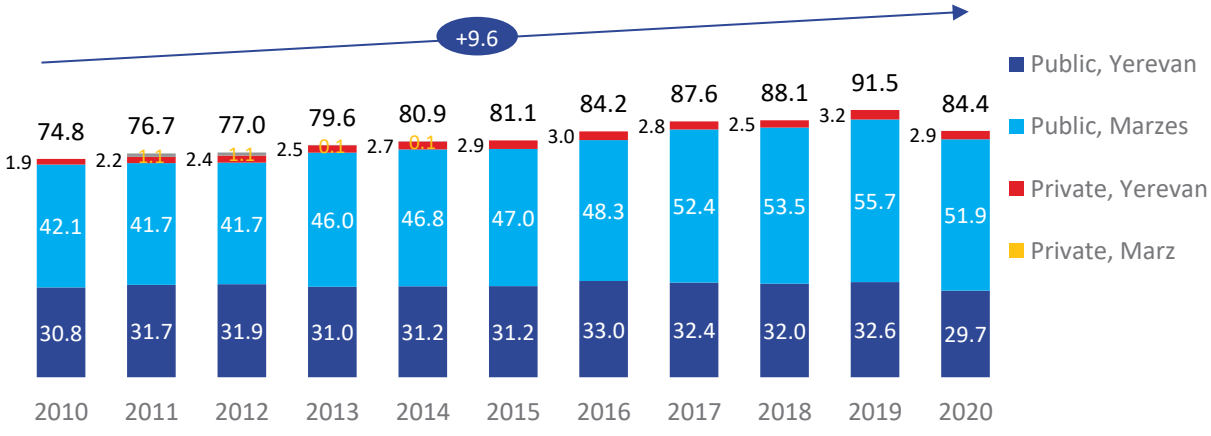
*Preschool supply = number of places (design capacity) / population (0-5)

**Preschool load = enrollment / number of places (design capacity)

Source: ESA based on Armstat, 2022

The preschool load in 2020 was in the range of 56%-76%, being highest in Syunik and Yerevan and lowest in Vayots Dzor and Tavush. The variation in load was much smaller than in supply (Table 4-9).

FIGURE 4-8 NUMBER OF PRESCHOOL PLACES IN THE MARZES AND YEREVAN (IN 1000S), 2010-2020



Source: Armstat, 2022

Overall, the total number of places in preschool institutions (both public and private) increased by 9,625 in 2010-2020 (Figure 48). The increase was mainly due to new places in public preschools in the marzes (the design capacity of which increased by 9,820 places) and in private preschools in Yerevan (an increase of 942 places). Meanwhile, the design capacity of public preschools in Yerevan decreased by 1,137 places. As for private preschools in the marzes, according to official statistics, there are none.

There are more places in both public and private kindergartens than there are enrolled children (Figure 4-6), although apparently the preschool demand prevails over the supply. Notably, in Yerevan, public preschool institutions have a long waiting list of children waiting for enrollment (see below). This apparent contradiction can be explained by the fact that the number of places is reported based on the design capacity of preschool institutions which were mainly built in the Soviet era.

> The average load of preschool institutions in Armenia in 2020 was 66.5%, which indicates that a significant part of the design capacity is not suitable for the provision of preschool services

This phenomenon has two aspects: financial and building conditions. The preschool buildings in some rural areas have capacity, but community financial resources are insufficient to increase enrollment, or the design capacity is officially large, but the condition of the buildings does not allow to enroll the relevant number of children[16]. This is less of a concern for Yerevan and the urban areas in the marzes, where the conditions of buildings is relatively better and the budgets are larger.

> In Armenia, pupil-to-teacher ratio in pre-primary education is significantly lower than in the benchmark countries, indicating an absence of challenges in this regard

PUPILS PER TEACHER RATIO | In 2019, in public and private preschool institutions, the pupils numbered 82,089, while the pedagogical-educative staff (PES) numbered 6,505; thus, the pupils per PES ratio was 12.6 (Table 4-10).

TABLE 4-10 PUPILS PER PEDAGOGICAL-EDUCATIVE STAFF (PES) RATIO, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of pupils (in 1000s)	58.3	63.5	69.5	68.9	72.7	72.4	72.3	76.4	79.1	82.1	56.1
Number of PES (in 1000s)	5.3	5.4	5.3	5.6	5.8	5.9	6.0	6.1	6.2	6.5	6.1
Pupils per PES	**10.9**	**11.8**	**13.1**	**12.2**	**12.4**	**12.1**	**12.0**	**12.4**	**12.7**	**12.6**	**9.3**

Source: ESA based on Armstat, 2022

The average size of preschool institutions in 2020 was highest in Yerevan (104.3 pupils), followed by Kotayk (91.1 pupils) and Syunik (69.7 pupils). In the remaining marzes, the average size of preschools was lower than the national average. The pupil-to-PES ratio was also highest in Yerevan (11.7 pupils), followed by Armavir (where the pupil-to-preschool ratio was one of the lowest) and Kotayk (Table 4-11).

According to the WB's data, the pupils per teacher ratio in pre-primary education in Armenia was 6.3 in 2018. The same ratio was 11.9 in Moldova, 9.7 in Latvia, 12.0 in Slovakia, while the OECD average was 15.2 (WB, 2022).

Target 4.c of the Sustainable Development Goals (SDG) aims to substantially increase the supply of qualified teachers. The ratios of pupil-trained teacher and pupil-qualified teacher are directly

[16] Derived from the conversation with General Education departments of Yerevan Municipality and MoESCS.

related to this target.

According to UNESCO's data, the pupil-trained teacher ratio in pre-primary education was 7.5 in Armenia (in 2017), 9.3 in Latvia (in 2019), 11.7 in Moldova (in 2020), and 19.9 in Albania (in 2018). Meanwhile, in 2020, the pupil-qualified teacher ratio in pre-primary education was 6.9 in Armenia, 13.0 in Moldova, and 20.4 in Albania (UNESCO, 2022).

TABLE 4-11 PUPILS PER PEDAGOGICAL-EDUCATIVE STAFF (PES) AND PER PRESCHOOL, 2020

REGION	Per PES	Per preschool	Region	Per PES	Per preschool
Yerevan	11.7	104.3	**Kotayk**	10.2	91.1
Aragatsotn	5.1	53.3	**Shirak**	7.2	33.2
Ararat	8.7	58.6	**Syunik**	8.2	69.7
Armavir	10.6	38.4	**Vayots Dzor**	9.4	30.4
Gegharkunik	5.4	44.5	**Tavush**	6.8	38.1
Lori	8.9	41.6	**Total RA**	**9.3**	**61.7**

Source: Armstat, 2022

Thus, in Armenia, the pupil-to-teacher ratio in pre-primary education is significantly lower than in the benchmark countries (for which data is available), and there are no challenges in this sense.

ACCESS TO AND ATTENDANCE AT PRESCHOOLS

Preschool coverage for 3-5-year-olds, defined by gross enrollment ratio, was 61.6% in 2019 (Figure 43), meaning that two out of five children of preschool age do not attend preschool. As described in the UNESCO-WB-UNICEF-GPE guidelines, gross enrollment ratio is a good indicator of the system's physical capacity. Thus, a gross enrollment ratio of 50% indicates that preschool infrastructure can only cater for half of the preschool-aged children (UNESCO, WB, UNICEF, GPE, 2014, pp. 69-76, Vol. 1)

> In Yerevan, there are half as many children waiting to be enrolled in preschools as there are children currently enrolled

As of June, 2022, there were 25,030 children enrolled in the community preschools of Yerevan and 14,681 children on the waiting list, of which 12,490 were children of the corresponding age (Yerevan Municipality, 2022). Meanwhile, the 3-5-year-old population in Yerevan numbered 47,307 in 2020. Thus, the low enrolment rate is not due to lack of demand, but to insufficient supply.

A 2017 study by the Save the Children Foundation states that parents have a positive attitude towards enrolling their child in preschool institutions, and over 60% of respondents were in favor of compulsory preschool education. There is an awareness of the importance of preschool education for the child to develop social functions, improve future school performance, develop communication skills, and the general development of the child (Save the Children, 2017). The study confirms that there is a demand for preschool education and low enrollment rates are due to a lack of supply of preschool education.

> According to a study commissioned by UNICEF, the quality of meals, large group sizes, and non-transparent preschool admission policies are some of the reasons which discourage parents in enrolling their children in public preschools

The main social groups excluded from preschool education in Armenia are those living in small, sparsely populated or remote communities, children with special needs, children of Syrian-Armenians, as well as children from extremely poor or high-risk families (Save the Children, 2017).

The most vulnerable group among those excluded from preschool education are children with disabilities. Parents of children with disabilities

in public kindergartens are often told that there are no conditions for special education in their institution (Save the Children, 2017).

According to a study of pre-primary education in Armenia, commissioned by UNICEF Armenia, among the reasons for not enrolling children in public preschool institutions, a significant role is played by the dissatisfaction of parents with the quality of food and diet, the large size of preschool groups, and non-transparent preschool admission policies. Accordingly, many middle- and high-income families choose to send their children to private preschools. The study also states that parents see preschool attendance as a constant source of respiratory diseases in children (UNICEF, 2022b).

> In 2016, according to DHS, the adjusted net preschool attendance rate in the poorest quintile was 16.2 percentage points lower than in the middle wealth quintile

According to a survey conducted in Gyumri, the reasons for not sending children to kindergartens are high fees (which fluctuate between 5,000-8,000 AMD), poor quality of food, poor building conditions and the insufficient level of educator training. In 2019, in Shirak (Gyumri is the administrative center of Shirak), the poverty rate (44.3%), and child poverty rate (51.8%) were the highest in Armenia. In 2017-2019, about 38% of children aged 3-6 did not attend kindergarten in Gyumri (Simonyan, 2019).

A study conducted in Syunik states that, compared to the country average, the situation with preschool education in Kapan is better. As of January 2019, there were 2,035 preschool age children in the consolidated community of Kapan, of which 1,476 were attending preschool institutions. Thus, 72.5% of the community's children attended kindergartens, but most of them lived in urban settlements, and only 5 out of 37 rural settlements had preschool institutions. The main reason for this is the very small number of children in these settlements. (Tsiatsan NGO, 2019).

The study confirms that most parents support their children's preschool education, with a small number of those who think children are better cared for at home. Insufficient kindergarten conditions have been mentioned as a reason for not attending only in a small number of kindergartens in Kapan and the village of Davit Bek. The study raises the concern that despite the widespread advocacy for inclusive education, parents of children with special needs prefer not to send their children to kindergarten. The reason is that both kindergartens and parents of other children are not ready to accept those with special needs (Tsiatsan NGO, 2019).

According to the Human Rights Defender's 2020 report, appeals to the Human Rights Defender continued to raise issues of admission, as well as the lack of places in preschool institutions due to overcrowding. There has also been a trend towards pre-screening and restricting access for children from certain groups, especially in high demand kindergartens (Human Rights Defender, 2020).

Official statistics do not provide data on preschool attendance, presumably due to a lack of data.

The Save the Children study states that attendance at preschool educational institutions is quite high, since 89.4% of children enrolled in preschool institutions attend every day and 84% of the enrolled spend over four hours there. Children in rural areas and children from low-income households attend kindergartens more regularly, both in terms of time spent there and in terms of attendance rate. Children of parents with higher education are more likely to attend preschools; in addition, the children of working parents are twice as likely to attend preschools (Save the Children, 2017).

According to the latest DHS, the adjusted net attendance rate for 5-year-olds (ANAR5)[17] in 2016 was almost six percentage points higher for girls: 64.8% for girls versus 58.9% for boys (Table 4-13). Broken down by type of settlement, ANAR5 was over eight percentage points higher in urban areas than in rural areas. By income quintiles, ANAR5 was highest for the middle wealth quintile at 69.6%, while it was 63.4% for the richest quintile and 53.4% for the poorest quintile (the DHS data on attendance here is taken from the UNICEF database (UNICEF, 2022)). Thus, ANAR5 was 16 percentage points lower for the poorest wealth quintile compared to the middle wealth quintile, which may contribute to higher dropout

[17] Total number of 5-year-old students who are attending school at any level of education, expressed as a percentage of the corresponding population.

rates from education for children from poorer backgrounds later in life.

According to the ILCS 2020, the gross enrollment ratio in pre-primary education was 28% in non-poor households, while it was 16% in poor households and 0% in extremely poor households. Across consumption quintiles, the gross enrollment ratio was 16% in the first quintile, 22% in the third quintile, and 39% in the fifth quintile (Armstat, 2021a).

TABLE 4-12 ADJUSTED NET ATTENDANCE RATE, PRE-PRIMARY EDUCATION, 5 YEAR OLDS, ARMENIA

INDICATOR	2016	INDICATOR	2016
Female	64.8	**Poorest wealth quintile**	53.4
Male	58.9	**Second wealth quintile**	55.2
Total of both sexes	61.5	**Middle wealth quintile**	69.6
Urban residence	64.9	**Fourth wealth quintile**	64.8
Rural residence	56.5	**Richest wealth quintile**	63.4

Source: UNICEF, 2022

According to the ILCS 2018, seven out of ten children under the age of six did not attend pre-primary educational institutions in Armenia. The leading causes of non-attendance were the non-employed status of the child's mother (39.5% of cases), the absence of a kindergarten (11.3%), the high cost of attendance (2.1%), and the non-operation of the kindergarten (2.1%). Across consumption quintiles, the non-employed status of the mother was a leading cause for 46.9% of the poorest quintile, 35.3% of the middle quintile, and 42.6% of the richest quintile. Meanwhile, the absence or non-operation of a kindergarten was a leading cause for 11.6% of the poorest quintile, 14.9% of the middle quintile, and 9.2% of the richest quintile (Armstat, 2019).

In 2018, the ILCS also explored the distance of the nearest kindergarten from the dwellings of households, of which 59.9% reported a distance of less than one kilometer, while 17.2% reported four or more kilometers. Characteristically, there were differences between the poorest and wealthiest households, as the average distance for the poorest quintile was 2.6 km and for the richest quintile, 2.0 km. More specifically, the distance was less than one kilometer for a smaller proportion of the poorest (55.3%) than for the richest (67.1%) households (Armstat, 2019).

STATE POLICY IN THE FIELD OF PRESCHOOL EDUCATION

In 2008, the Government of the RA adopted the "Strategic Plan for the Reform of Preschool Education for 2008-2015", with the purpose of improving the quality and accessibility of preschool education services (Government, 2008). Particular attention was paid to preparing children of senior preschool age (5-6 years old) for primary education. The Strategic Plan set a goal to making preschool education for the upper preschool age group (5-6 years old) universal and increase their enrollment to around 90% in 2015. At the time of the reform inception in 2009, about 47% of communities in Armenia did not have kindergarten premises (EV Consulting, 2021).

From 2010 to 2020, the number of public preschools in Armenia rose by 41.4% from 606 to 857 (mostly in villages, from 228 to 439) (Armstat, 2022).

The current government program sets the target of building or refurbishing 500 preschool institutions and increasing the enrollment rate of 3-5-year-olds to at least 85% by 2026 (Government, 2021).

Meanwhile, the draft State Program of Education Development until 2030 (Government, 2022b) sets more ambitious targets, such as

- ensuring preschool services in all settlements,
- achieving 100% enrollment of 5-year-old children in pre-primary education,
- achieving at least 95% enrollment of 3-5-year-old children in pre-primary education,
- and ensuring nursery services in all consolidated communities.

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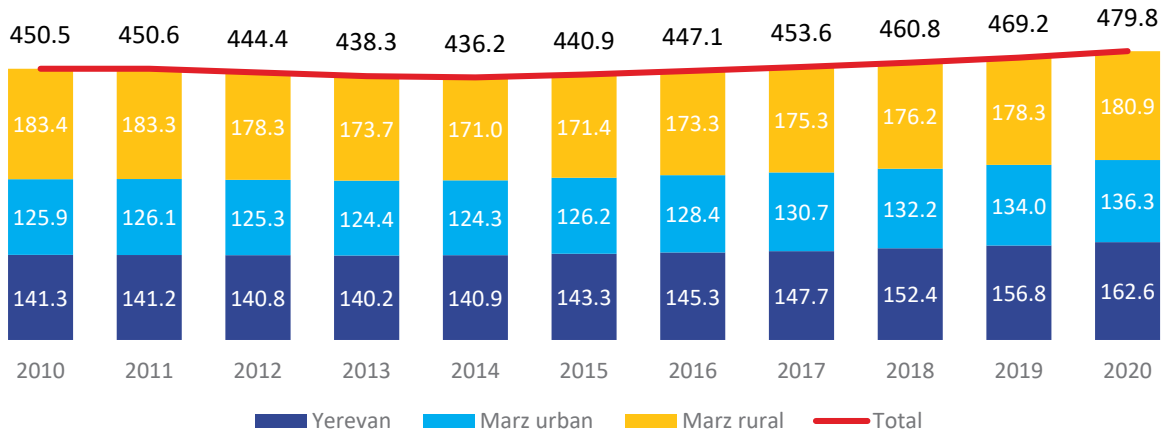
SECTION 4-2: SCHOOL EDUCATION

ENROLLMENT IN SCHOOL EDUCATION

SCHOOL AGE POPULATION | The number of children aged 6-17, the official age for 12-year education, in 2020, amounted to 479.800 people, which is 29.300 more than in 2010 (Figure 49). Over the past decade, the number of children aged 6-17 first decreased by 14.300 during the 2010-2014 period, and then began to steadily increase to reach the current number. This dynamic contrasts with the evolution of the preschool population (0-5 years old), which first increased during the 2010-2014 period, and then steadily decreased to 18.400 in 2020, fewer than in 2010.

> The number of children of primary and lower secondary age increased in all types of settlements, while the number of children of upper secondary age decreased from 2010 to 2020

FIGURE 4-9 POPULATION DYNAMICS BY TYPE OF SETTLEMENT, 6-17 YEARS OLD, 1000 PEOPLE, 2010-2020



Source: Armstat, 2022b

Broken down into settlements, the population aged 6-17 increased by 21,300 in Yerevan and by 36,700 in the urban settlements of the marzes, while decreasing by 20,800 in rural settlements.

> From 2015 to 2020, the number of pupils increased at all levels of education, both in Yerevan and the marzes

Broken down into age groups, over the 2010-2020 period, the population aged 15-17 (official age for upper secondary education) decreased both in Yerevan and in the urban and rural settlements of the marzes.

In parallel, the number of children aged 6-9 (primary education) and 10-14 (lower secondary education) increased in all types of settlements (Figure 4-10).

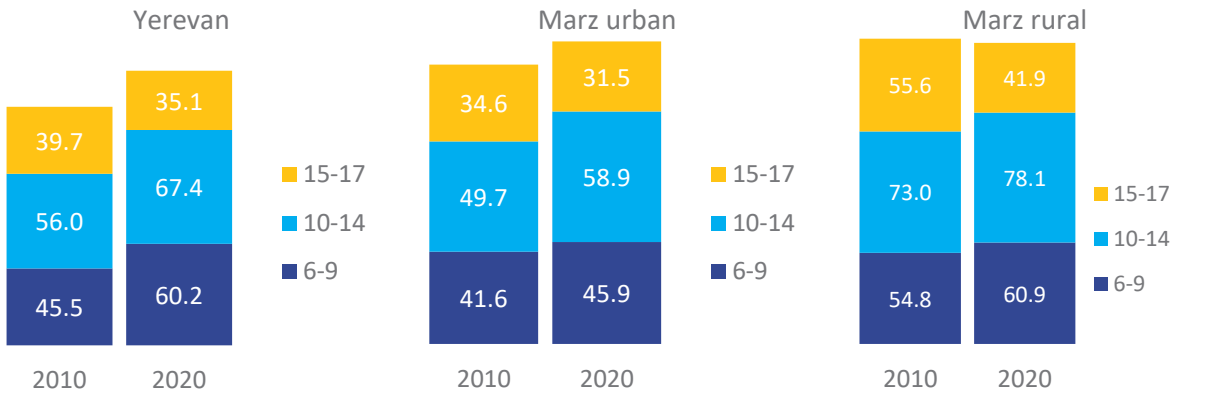
NUMBER OF PUPILS | The change in population mirrored the change in the number of enrolled children in general education, with enrollment falling in the first half of the past decade and then steadily rising. In 2020, the number of pupils in general education stood at 399.300, which was 28.400 more than in 2010 (Figure 4-11, Table 4-14).

Broken down into types of settlements, the number of pupils in general education increased by 19.500 in Yerevan and by 21.400 in the urban settlements of the marzes, while decreasing by 13.000 in rural settlements.

In terms of gender composition, the proportion of girls in total enrollment remained virtually unchanged at 47.7% in 2010-2020, with the absolute enrollment of girls and boys increasing by 7.2% and 8.1% respectively.

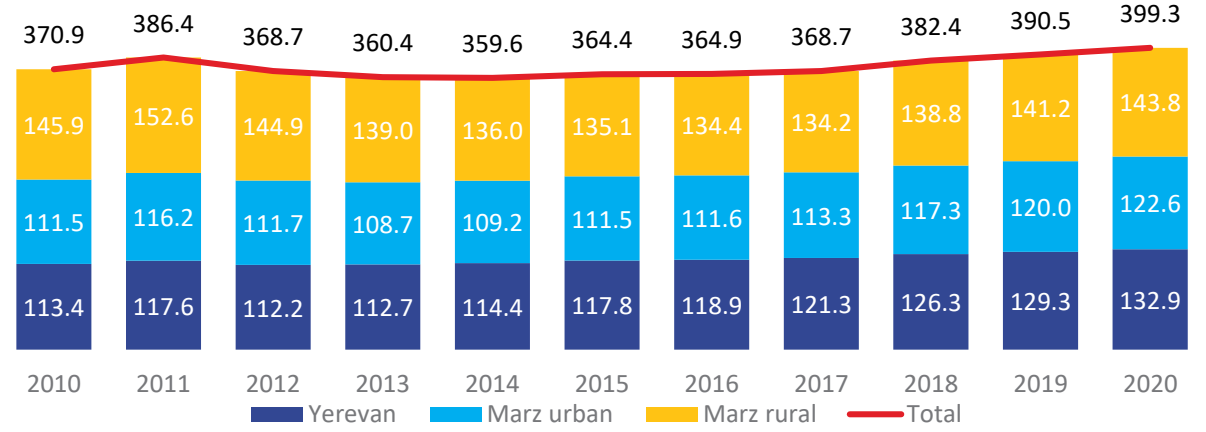
In 2015-2020, the number of pupils increased at all levels of education both in Yerevan and in the urban and rural settlements of the marzes. The increase was the most significant in the lower secondary schools of Yerevan: from 52,900 in 2015 to 61,400 in 2020 (by 8,500 people or 16.1%) (Figure 4-12).

FIGURE 4-10 POPULATION OF 6-17 YEARS OLD BY AGE GROUP AND TYPE OF SETTLEMENT, 1000 PEOPLE, 2010-2020



Source: Armstat, 2022b

FIGURE 4-11 NUMBER OF PUPILS IN GENERAL EDUCATION BY TYPE OF SETTLEMENT, 1000 PEOPLE, 2010-2020



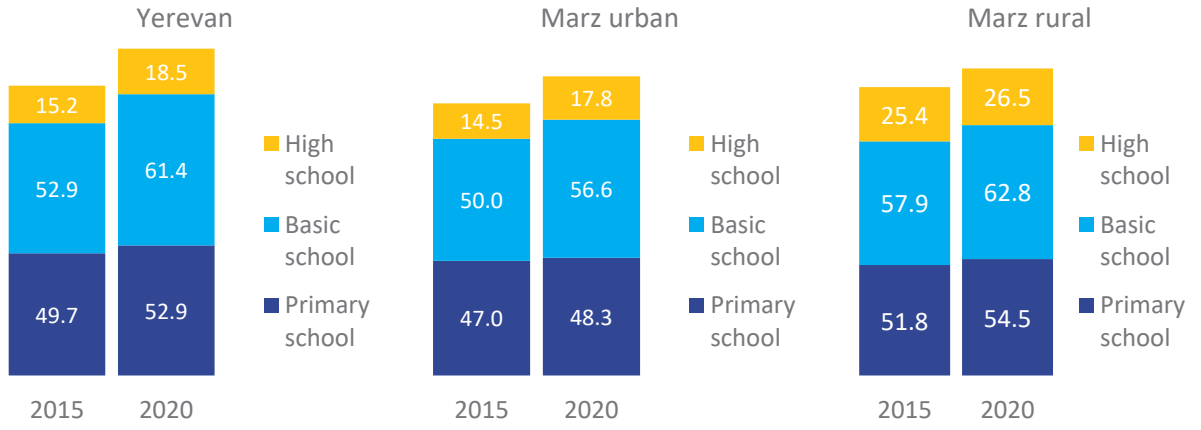
Source: Armstat, 2022

TABLE 4-13 NUMBER OF PUPILS IN GENERAL EDUCATION BY GENDER, 1000 PEOPLE, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Female	177.5	186.0	177.1	172.8	171.4	173.0	173.0	174.5	182.2	186.2	190.2
Male	193.4	200.5	191.6	187.7	188.2	191.4	191.9	194.2	200.2	204.3	209.1
Total RA	**370.9**	**386.4**	**368.7**	**360.4**	**359.6**	**364.4**	**364.9**	**368.7**	**382.4**	**390.5**	**399.3**

Source: Armstat, 2022

FIGURE 4-12 NUMBER OF PUPILS IN GENERAL EDUCATION BY EDUCATION LEVEL AND TYPE OF SETTLEMENT, 1000 PEOPLE, 2015-2020



Source: Armstat, 2022

SCHOOL ENROLLMENT | Over the past decade, enrollment ratios have deteriorated at all levels of school education (Table 4-15).

In primary education, the gross enrollment ratio (GER) stood at 93.2% in 2020, down 3.5 percentage points from 2011, while the net enrollment rate (NER) was 90.1% in 2020 against 94.2% in 2011.

Enrollment ratios have deteriorated at all levels of school education over the past decade

In lower secondary education, the GER was 90.6% in 2020 compared to 97.0% in 2011. At the same time, the NER was 89.2%, down 9.4 percentage points compared to 2011.

TABLE 4-14 ENROLLMENT RATIOS IN GENERAL EDUCATION BY EDUCATION LEVEL, %, 2011-2020

Education level		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Primary	GER	96.7	95.2	94.1	93.1	91.6	91.2	91.3	91.1	92.9	93.2
	NER	94.2	91.9	91.1	90.8	89.4	89.1	89.4	88.2	89.8	90.1
	ANER	96.2	93.4	91.5	91.1	89.6	89.5	89.5	88.3	89.9	90.2
Lower secondary	GER	97.0	94.8	92.6	92.6	96.3	90.7	90.1	89.4	90.0	90.6
	NER	98.6	97.0	94.6	94.5	95.3	89.9	89.2	87.9	88.5	89.2
	ANER	98.6	97.0	94.6	94.5	95.3	89.9	89.2	87.9	88.5	89.2
Upper secondary GER		79.3	74.1	74.0	72.4	57.9	65.1	65.5	59.9	59.5	57.9
TOTAL GER		**92.0**	**89.2**	**87.9**	**87.8**	**86.4**	**86.0**	**85.7**	**83.0**	**83.2**	**83.2**

GER (Gross Enrollment Ratio) - Total enrollment in a specific level of education, regardless of age, expressed as a percentage of the population in the official age group corresponding to that level of education.

NER (Net Enrollment Rate) - Enrollment of the official age group for a given level of education expressed as a percentage of the population in that age group.

ANER (Adjusted Net Enrollment Rate) - Enrollment of the official age group for a given level of education either at that level or the levels above, expressed as a percentage of the population in that age group.

Source: Armstat, 2022

TABLE 4-15 GROSS ENROLLMENT RATIO BY EDUCATION LEVEL AND SETTLEMENT, %, 2015-2020

Education level	Yerevan		Marz Urban		Marz Rural	
	2015	2020	2015	2020	2015	2020
Primary	92%	88%	101%	105%	85%	89%
Lower secondary	94%	91%	98%	96%	85%	80%
Upper secondary	47%	53%	51%	56%	60%	63%

Source: ESA based on Armstat, 2022

In upper secondary education, the GER was the lowest among all levels of education and the decline over the decade was the largest. Specifically, the GER was 57.9% in 2020, down 21.4 percentage points from 2011.

TABLE 4-16 GROSS ENROLLMENT RATIOS IN PEER AND BENCHMARK COUNTRIES BY EDUCATION LEVEL, %, 2010-2020

COUNTRY	Primary		Lower secondary		Upper secondary	
	2010	2020 or latest	2010	2020 or latest	2010	2020 or latest
Armenia	99.1	91.2	107.2	90.2	99.7	81.7
Albania	…	100.2	…	…	…	…
Belarus	104.4	100.5	98.7	97.6 (2018)	127.8	115.4 (2018)
Estonia	…	97.9 (2019)	…	…	…	…
Georgia	103.3	99.3	102.6	100.3	92.8 (2013)	105.0
Kyrgyzstan	…	102.6	…	…	…	…
Latvia	…	100.0 (2019)	…	…	…	…
Lithuania	…	103.0 (2019)	…	…	…	…
Moldova	…	106.3	…	104.9	…	…
Ukraine	98.8	99.0 (2014)	102.9	97.4 (2014)	80.1	92.8 (2019)
Poland	96.5	97.1 (2019)	95.4	104.4 (2019)	96.4	119.1 (2019)
Czechia	103.8	100.3	97.8	97.7 (2019)	92.2	105.4 (2019)

Source: UNESCO, 2022

Overall, the GER in both primary and secondary education was 83.2% in 2020, compared to 92.0% in 2011.

In Yerevan, the GER at all levels of education was lower than in the urban settlements of the marzes in both 2015 and 2020 (Table 4-16). The largest difference was in primary education, where the GER in 2020 was 88% in Yerevan and 105% in the urban settlements of the marzes.

In the urban settlements of the marzes, the GER at primary education exceeds 100%, partly because a significant number of pupils from neighboring rural communities are enrolled in the nearby regional centers.

In rural settlements, the GER in both primary and lower secondary education is lower than in urban settlements of the marzes.

However, the GER in upper secondary education in rural settlements is higher than in Yerevan or the urban settlements of the marzes. This is due to the fact that in rural communities, opportunities for pupils are limited, i.e., in rural areas there are no vocational education institutions, colleges or gymnasiums, and general secondary schools provide 12 years of education, which eliminates the logistical difficulties of attending an upper secondary school in other localities.

There is a significant drop in the enrollment rate at the transition to upper secondary school, but this is mainly due to the fact that students choose the path of study in vocational schools.

Compared with peer countries, the GER in Armenia is significantly lower than in Georgia or Moldova. In 2020, the GER in primary education, according to the UNESCO Institute for Statistics, was 91.2% in Armenia, compared to 99.3% in Georgia and 106.3%[18] in Moldova (Table 417). Meanwhile, the GER in lower secondary education was 90.2% in Armenia, compared to 100.3% in Georgia and 104.9% in Moldova. The GER in upper secondary education was 81.7% in Armenia against 105.0% in Georgia.

Household expenditure per pupil and enrollment | According to the ILCS 2016, household expenditure per pupil attending upper secondary school (5,946 AMD or 12.4 USD per month) was about twice as high as expenditure per pupil attending primary school (2,908 AMD or 6.1 USD per month) or lower secondary school (3,230 AMD or 6.7 USD per month) (Armstat, 2017).

> In 2018, 1.3% of all children aged 15-17 indicated high costs as the main reason for not continuing education

According to the ILCS 2020, household expenditure per household member attending school (at any level) averaged 7,184 AMD (or 14.7 USD) per month (Armstat, 2021a).

Although household spending per pupil has increased with educational level, it appears to have played a minor role in the decline in enrollment by educational level. According to the ILCS 2016, 12.0% of children aged 15-17 years were not enrolled in any educational institution, but only 0.6% named the high costs of educational services as the leading reason for not continuing education (Armstat, 2017). Two years later, meanwhile, in a similar study, the proportion of those who indicated the high costs has increased.

Thus, according to the ILCS 2018, 7.8% of children aged 15-17 years old were not enrolled in any educational institution, and 16.9% indicated high costs as the reason for not continuing education (Armstat, 2019). The latter accounted for 1.3% of children aged 15-17.

Enrollment by household income | In primary school, according to the ILCS 2016, the gross enrollment ratio was 94% in non-poor households and 97% in both poor and extremely poor households. The GER varied significantly across consumption quintiles, since it was 98% in the poorest first quintile, 91% in the fourth quintile, and 99% in the fifth quintile (Table 4-17).

> In poor households, the gross enrollment ratio in high school is about ten percentage points lower than in non-poor households

The ILCS 2018 results were broadly similar, except for the extremely poor households and the richest quintile. Specifically, in 2018, the gross enrollment ratio in primary education was 95% in non-poor households, 99% in poor households[19], and 89% in extremely poor households. The GER was 98% in the first quintile, 92% in the fourth quintile, and 91% in the fifth quintile (Table 417).

In middle school, the GER according to the ILCS 2016 was close or above 100%, while according to ILCS 2018 it was significantly below 100% for the 3rd and 5th consumption quintiles (Table 4-17).

In high school, the GER was 69% in 2016 and 74% in 2018 in non-poor households, while in poor households, it was lower by 15 percentage points in 2016 and 7 percentage points in 2018 (Table 4-17).

Gender parity in enrollment | In 2012-2020, both in primary and lower secondary education, the gender parity indexes (GPI) based both on gross

[18] GER may exceed 100% since it also includes late enrollment, early enrollment, and repetition

[19] The differences in GER in extremely poor households between the two surveys of 2 years apart may be due to the relatively small number of extremely poor households, as the extreme poverty rate was 1.0% in 2018.

enrollment ratios and total net enrollment rates were almost at parity, with a slight advantage of girls. In particular, the GPI was 1.02 in 2020 in lower secondary education, while it was at 1 in primary education (Table 4-18).

TABLE 4-17 GROSS ENROLLMENT RATIOS BY POVERTY STATUS OF HOUSEHOLD AND CONSUMPTION QUINTILE

Level of education /year	Non-poor	poor	Extremely poor	Consumption quintile				
				1st	2nd	3rd	4th	5th
Primary school								
2016	94%	97%	97%	98%	93%	94%	91%	99%
2018	95%	99%	89%	98%	96%	98%	92%	91%
Middle school								
2016	100%	99%	105%	97%	100%	100%	100%	97%
2018	96%	96%	121%	96%	98%	94%	101%	92%
High school								
2016	69%	54%	61%	...	...	...	...	...
2018	74%	67%	52%	...	...	...	...	...

Source: Armstat, 2017, 2019

> In high school, the gender gap in enrollment is considerable, with boys at a disadvantage

In high school, however, the gender gap in enrollment is significant, with a sizable advantage of girls. In 2020, the GPI amounted to a 1.096 for gross enrollment and a 1.135 for total net enrollment. The reasons behind this gap are that a higher proportion of boys tend to proceed through the vocational track, as well as unregistered emigration of boys aged 15-17 to evade military service.

However, boys' lower propensity to enter high school may also indicate a lower propensity to continue education at the tertiary level.

TABLE 4-18 GENDER PARITY INDEX BASED ON GROSS AND NET ENROLLMENT, 2012-2020

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gender parity index based on Gross enrollment ratio									
Primary	1.013	1.013	1.013	1.015	1.009	1.003	1.000	1.005	1.011
Lower secondary	...	...	...	...	1.025	1.021	1.017	1.022	1.020
Upper secondary	...	1.048	1.086	1.114	...	...	1.085	1.121	1.096
Gender parity index based on total Net enrollment rate*									
Primary	1.009	1.007	1.007	1.014	1.008	1.001	0.999	1.001	1.002
Lower secondary	...	...	...	...	1.023	1.023	1.018	1.020	1.024
Upper secondary	...	...	...	...	...	...	...	1.153	1.135

*Total net enrollment rate is the total number of students of the official age group for that level of education who are enrolled in any level of education divided by the total population in that age group

Source: UNESCO, 2022

SCHOOL ENROLLMENT MONITORING MECHANISM | The EMIS platform (reports.emis.am) is the primary tool for recording and monitoring school enrollment. It is a state-of-the-art solution with extremely rich functionality, including very diverse data on schools, students and teachers. The data is retrievable, both aggregated by various criteria and individually for each school.

INTERNAL EFFICIENCY OF PRIMARY AND SECONDARY EDUCATION

The internal efficiency of the education system assumes that children who start a cycle, complete it (do not dropout) and do so in the set number of years (do not repeat).

REPETITION RATE | In 2019[20], Armenia had one of the lowest repetition rates[21] in the world (UNESCO, 2022). In primary education, the repetition rate was 0.27% (for both sexes). Between grades one through four, the repetition rate ranged from 0.38% in grade one to 0.24% in grade four. By gender, the repetition rate for males (0.26%) was almost the same as for females (0.27%) (Table 4-19).

TABLE 4 -19 REPETITION RATE IN PRIMARY EDUCATION, %, 2019

	All grades	Grade 1	Grade 2	Grade 3	Grade 4
Both sexes	0.27	0.38	0.24	0.21	0.24
Female	0.27	0.35	0.21	0.24	0.28
Male	0.26	0.41	0.27	0.18	0.20

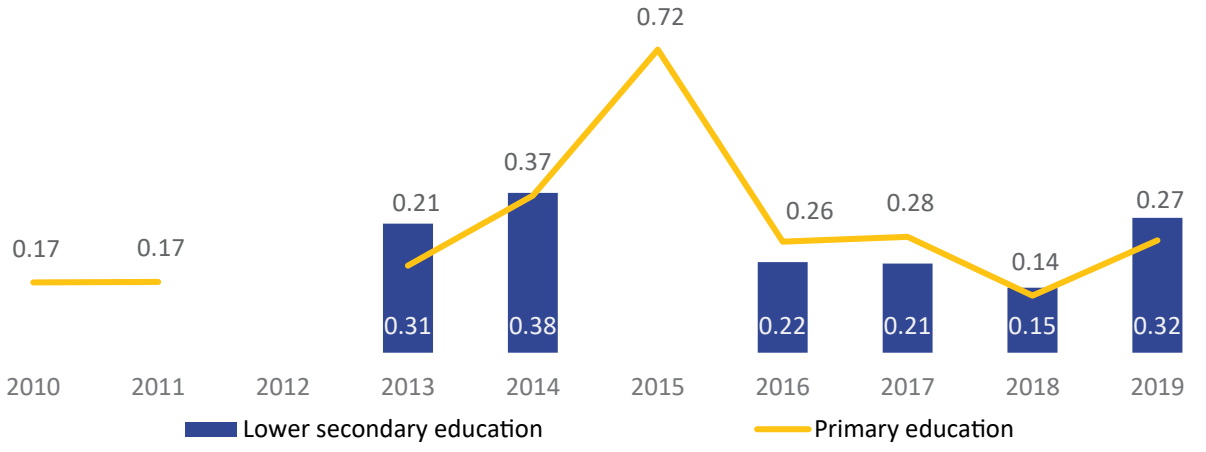
Source: UNESCO, 2022

TABLE 4-20 REPETITION RATE IN LOWER SECONDARY EDUCATION, %, 2019

	All grades	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
Both sexes	0.32	0.19	0.23	0.31	0.35	0.55
Female	0.24	0.20	0.17	0.24	0.25	0.33
Male	0.39	0.17	0.29	0.36	0.43	0.74

Source: UNESCO, 2022

FIGURE 4-13 REPETITION RATE IN PRIMARY AND LOWER SECONDARY EDUCATION, BOTH SEXES, %, 2010-2019*



Source: UNESCO, 2022

[20] 2019 is the latest year for which comparable data is available.
[21] Proportion of pupils from a cohort enrolled in a given grade at a given school year who study in the same grade in the following school year.

For the period of 2010-2020, the repetition rate in primary education increased only for a brief period in 2014-2015, reaching 0.72% (for both sexes), and then returned to a value of less than 0.3% from the following year (Figure 4-13).

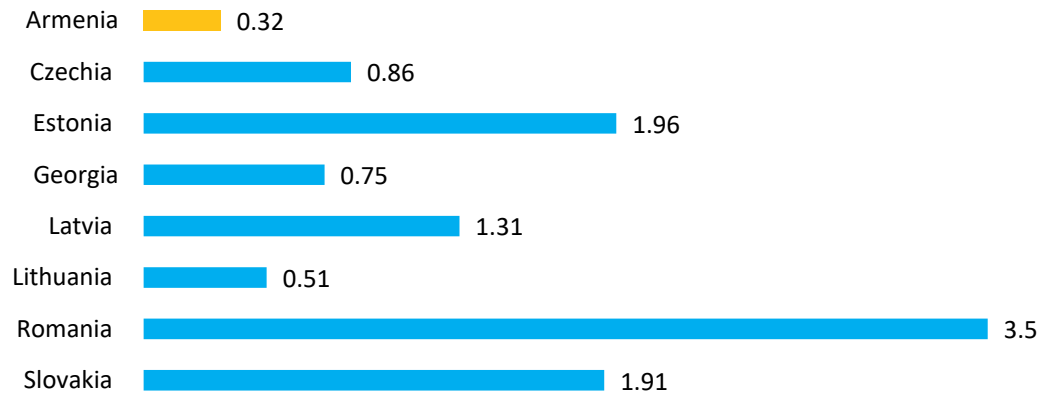
> Repetition and dropout rates in Armenia are among the lowest in the world

In lower secondary education, the repetition rate was 0.32% (for both sexes) in 2019 and ranged from 0.19% in grade 5 to 0.55% in grade 9. The rate of 0.74% for boys recorded in 2019 for grade 9 was the highest recorded rate for any gender and any grade over the past decade. Repetition rates differed by gender, as they were on average 1.6 times higher among boys than among girls (Table 4-20).

Compared to the benchmark countries, the repetition rate in Armenia was the lowest (Figure 4-14).

DROPOUT RATE | The dropout rate in Armenia is low. In 2020, there were only 160 dropouts from all grades of the 12-year education, which comprised only 0.04% of the total number of students of the previous year. Compared to 2017[22], the number of dropouts decreased 1.7 times in 2020 (Armstat, 2021d).

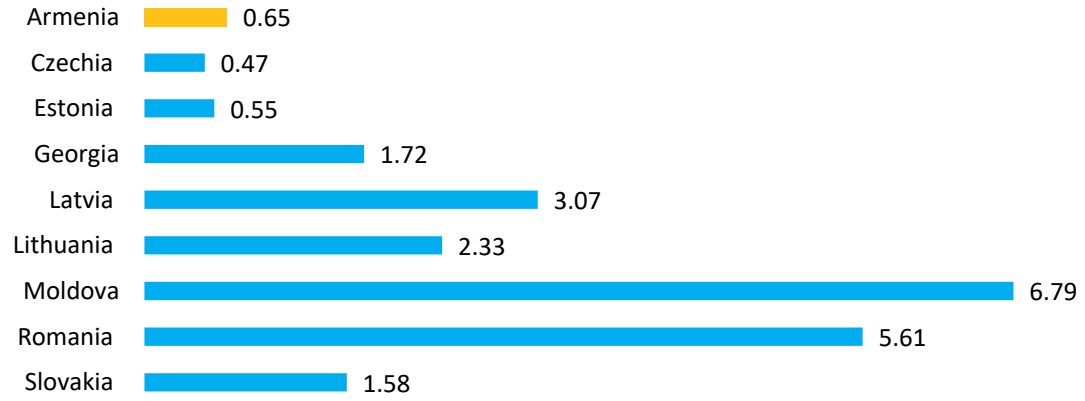
FIGURE 4-14 REPETITION RATE IN LOWER SECONDARY EDUCATION IN ARMENIA AND BENCHMARK COUNTRIES*, BOTH SEXES, %, 2019 OR LATEST AVAILABLE YEAR



*No data for Moldova

Source: UNESCO, 2022

FIGURE 4-15 DROPOUT RATE IN PRIMARY EDUCATION IN ARMENIA AND BENCHMARK COUNTRIES, BOTH SEXES, %, 2019 OR LATEST AVAILABLE YEAR



Calculated by extracting the survival rate to the last grade of primary education out of 100. Survival rate is the total number of pupils belonging to a school-cohort who reached each successive grade of the specified level of education divided by the number of pupils in the school-cohort, i.e., those originally enrolled in the first grade of primary education.

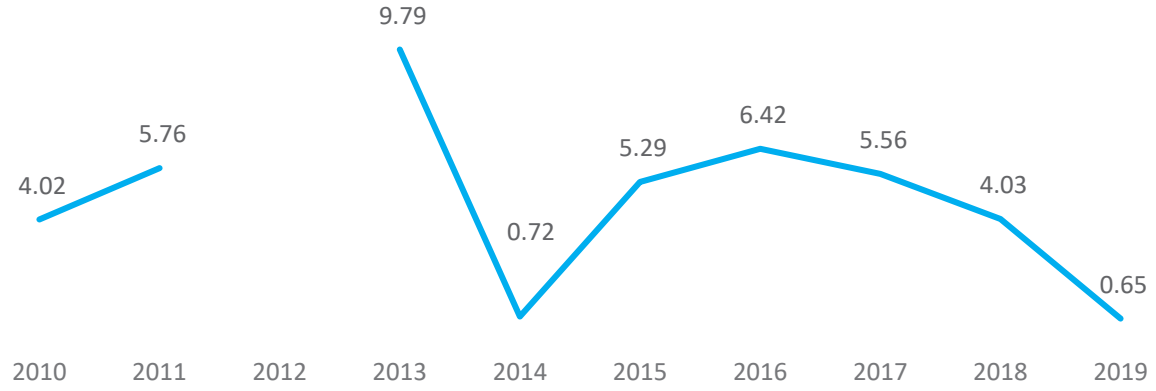
Source: UNESCO, 2022

[22] 12 years of education has been made compulsory since 2017. Until 2017, students in grades 10-12 could choose not to study. Therefore, the number of dropouts in grades 10-12 before and after 2017 is not comparable.

Among the 1,034 dropouts between 2017 and 2020, 37% were due to poor socio-economic conditions, 44% were due to parents not allowing children to attend school, and 14% died. The remaining 5% of cases were caused by various types of disabilities (Armstat, 2021d).

According to UNESCO, the dropout rate in Armenia is one of the lowest in the world (UNESCO, 2022). In 2019, the dropout rate in primary education was 0.65% (Figure 415). For comparison, in the same year the rate was about two and a half times higher in Georgia, and ten times higher in Moldova. In Armenia, the dropout rate in primary education was not always this low, as it averaged 5.2% in 2010-2019. Although in the second half of the 2010s, it clearly had a downward trend (Figure 4-16).

FIGURE 4-16 DROPOUT RATE* IN PRIMARY EDUCATION IN ARMENIA, BOTH SEXES, %, 2010-2019**



*Calculated by extracting the survival rate to the last grade of primary education out of 100.
**No data available for certain years.

Source: UNESCO, 2022

OUT-OF-SCHOOL CHILDREN

In 2020, 44,516 school-age children (both primary and secondary) were out-of-school, representing 9.6% of the compulsory school-age population (Table 4-21, Table 422). Of the total number of out-of-school children, 40% were of primary, 42% of lower secondary and 18% of upper secondary school-age.

> In 2020, there were 44,516 out-of-school children in Armenia

TABLE 4-21 NUMBER OF OUT-OF-SCHOOL CHILDREN, 2010-2020*

School-age	2010	2011	2015	2016	2017	2018	2019	2020
Primary	..	6,728	7,779	9,460	9,961	11,426	14,928	17,789
of which female (%)	...	40%	40%	43%	46%	47%	47%	46%
Lower secondary	4,834	9,663	..	11,800	13,021	14,888	19,244	18,864
of which female (%)	48%	43%	..	39%	39%	41%	42%	41%
Upper secondary	11,814	13,132	..	..	..	..	10,627	7,863
of which female (%)	48%	45%	..	..	..	..	16%	9%
Primary & secondary	..	29,523	..	..	..	..	44,799	44,516
of which female (%)	..	43%	..	..	..	..	37%	38%

*No data for some years

Source: UNESCO, 2022

In 2020, out-of-school primary school-age children accounted for 10.5% of the primary school-age population, while out-of-school children of lower and upper secondary school-age comprised 9.8% and 7.7% of the corresponding school-age population, respectively (Table 4-22).

TABLE 4-22 SHARE OF OUT-OF-SCHOOL CHILDREN IN SCHOOL-AGE POPULATION, %, 2010-2020*

School-age	2010	2011	2015	2016	2017	2018	2019	2020
Primary	..	4.8%	5.1%	6.0%	6.2%	6.9%	8.9%	10.5%
Lower secondary	2.5%	5.3%	..	6.8%	7.4%	8.2%	10.3%	9.8%
Upper secondary	12.1%	14.4%	..	..	..	..	10.5%	7.7%
Primary & secondary	..	7.1%	..	..	..	..	9.8%	9.6%

*No data available for certain years

Source: UNESCO, 2022

In Armenia, children are considered out-of-school if they are 6-18 years old and one of the following conditions is met (Government, 2021c):

- Not enrolled in a general or vocational education institution.
- Enrolled but not attending school for six days in row or more than 10 days per month.
- Registered in home-schooling, but state agency discloses that home-schooling is not provided.

The most common risk factors associated with being out-of-school are disability, extreme poverty, child labor, ethnicity, and refugee status (UNICEF, 2018).

CROSS SECTION SCHOOLING PROFILE

Schooling profiles give a representation of schooling careers, from cycle access to completion. They also enable the analysis of retention.

The cross-section schooling profile is the series of access rates to each grade of a given cycle. The first point of the profile is the gross intake ratio (GIR), defined as the ratio between the number new entrants to a given grade and the population at the official school entrance age for that grade. The last point of the profile is the access rate to the last grade of the cycle, which measures the share of children reaching that grade (UNESCO, WB, UNICEF, GPE, 2014).

In Armenia, there is a tendency among some parents to enroll their children in primary school after, and sometimes before, the official entrance age, which is six years. In 2010, 12% of first-graders were younger than six years old, and 10% were seven years old (seven-year-olds were not repeaters, since there was not a single repeater in the first-grade in Armenia in 2010) (Armstat, 2011).

> In 2018-2020, the gross intake ratio in the grade 4 was 92.1%, and in the grade 9 – 91.9%.
>
> For the 2012 cohort, the ratio of ninth graders to first graders was 92.0%.
>
> In 2020, 9.3% of basic school graduates were not enrolled in formal education

The issue with younger first-graders is currently largely resolved, as the law is observed more strictly. Even so, in 2020, 8% of first-graders were seven or more years old (Armstat, 2021d).

In 2020, the enrollment in the first grade of primary education amounted to 91.5% of the six-year-old population (Table 4-23). As mentioned, in 2020, 8% of first-graders were aged seven or over. Thus, in 2020, the net intake rate[23] was only 84%, meaning 16% of the six-year-old population was not enrolled in the first-grade.

On average, the gross intake ratio was 93.7% in 2012-2020.

[23] New entrants to the first grade of primary education who are of the official primary school entrance age, expressed as a percentage of the population of that age.

TABLE 4-23 GROSS INTAKE RATIO IN THE FIRST GRADE OF PRIMARY EDUCATION, BOTH SEXES

	2012	2013	2014	2015	2016	2017	2018	2019	2020
6-year-old population	38,054	39,702	40,489	44,084	42,701	40,821	41,945	41,353	42,895
Enrolled in 1st grade	35,740	37,723	38,340	40,219	40,360	39,187	38,674	38,847	39,248
GIR in 1st grade of primary education	93.9%	95.0%	94.7%	91.2%	94.5%	96.0%	92.2%	93.9%	91.5%

Source: ESA calculations

The capacity of the education system to provide primary (secondary) completion is indicated by the GIR to the last grade of primary (secondary) education. The latter is the number of new entrants in the last grade of primary (secondary) education, regardless of age, expressed as a percentage of the population at the theoretical entrance age to the last grade of primary (secondary) education.

In 2020, the gross intake ratio to the last grade of primary and lower secondary education was 93.2% and 90.1%, respectively (both sexes) (Table 4-24). Compared to the early 2010s, the intake ratios deteriorated in 2020, as in 2010, the GIR to the last grade of primary education was higher by 1.3 percentage points, while the GIR to the last grade of lower secondary education was higher by about 6.8 percentage points.

Gender-wise, the GIR for girls tends to be higher. In 2016-2020, the GIR to the last grade for girls was, on average, 0.7 percentage points higher than for boys in primary education, and 2.8 percentage points higher in lower secondary education.

TABLE 4-24 GROSS INTAKE RATIO TO THE LAST GRADE OF PRIMARY AND LOWER SECONDARY EDUCATION (%)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross intake ratio to the last grade of primary education											
Both sexes	94.5	93.8	93.9	..	96.7	94.6	90.8	92.0	89.9	93.1	93.2
Female	96.5	95.5	95.7	..	96.5	95.8	91.7	92.5	89.5	93.0	94.1
Male	92.8	92.3	92.3	..	96.8	93.6	90.0	91.5	90.2	93.3	92.4
Gross intake ratio to the last grade of lower secondary education											
Both sexes	96.9	..	..	..	..	..	87.5	89.0	93.3	92.2	90.1
Female	95.0	..	..	..	..	..	89.9	90.7	94.3	92.9	91.9
Male	98.8	..	..	..	..	..	85.5	87.6	92.4	91.6	88.6

Source: UNESCO, 2022

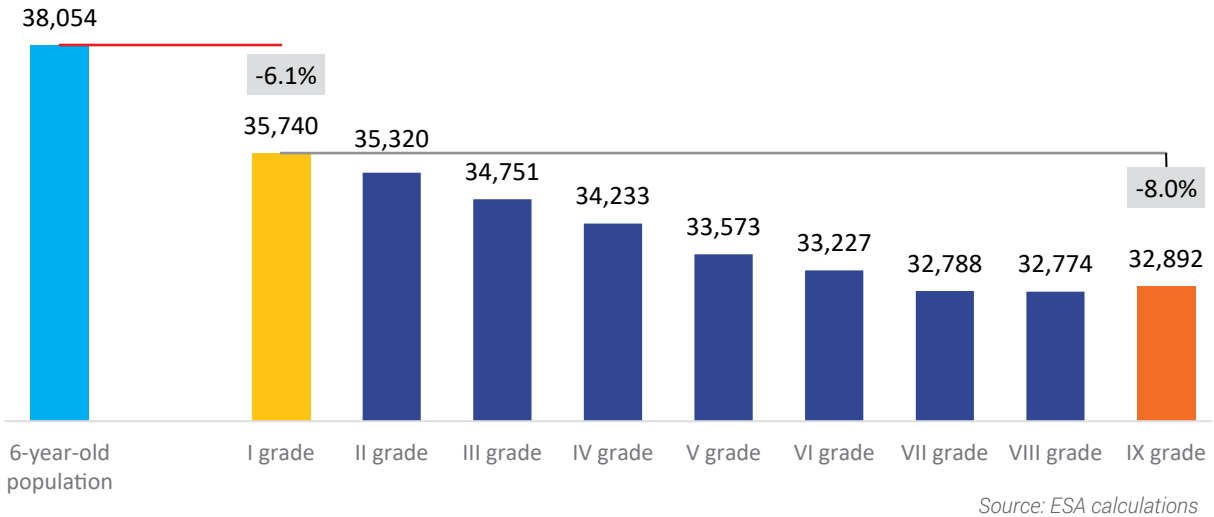
The ability of the education system to ensure completion is also evidenced by the ratio of 9th graders to 1st graders. For the 2012 cohort who reached 9th grade in 2020, the ratio was 92% (Figure 4-17) (the figure also shows that, in 2012, the number of first-graders was 6.1% less than the number of 6-year-olds, i.e. the GIR was 93.9%).

Access to the 5th grade was 93.9% for the 2012 cohort (both sexes) (Table 425), but improved by 2 percentage points, reaching 96.6% for the 2016 cohort. For girls, the improvement between the 2012-2016 cohorts was larger: 3.4 percentage points for girls compared to 2 percentage points for boys.

In a regional breakdown, in 2020 (the 2016 cohort), the ratio of fifth to first graders was less than 96% in Armavir, Gegharkunik, Lori, Shirak, and Vayots Dzor (Figure 418). Compared to 2012 (the 2008 cohort), access to the 5th grade improved in almost all the marzes (with the exception of Lori and Armavir). In absolute terms, the improvement was the largest in Aragatsotn (8.8

percentage points) and Kotayk (5.9 percentage points). The overall improvement in the country was 2.8 percentage points.

FIGURE 4-17 SCHOOLING PROFILE FROM 1ST TO 9TH GRADE, 2012 COHORT



Source: ESA calculations

TABLE 4-25 ACCESS TO THE 5TH GRADE, THE 2012-2016 COHORTS (RATIO OF 5TH TO 1ST GRADERS*, %)

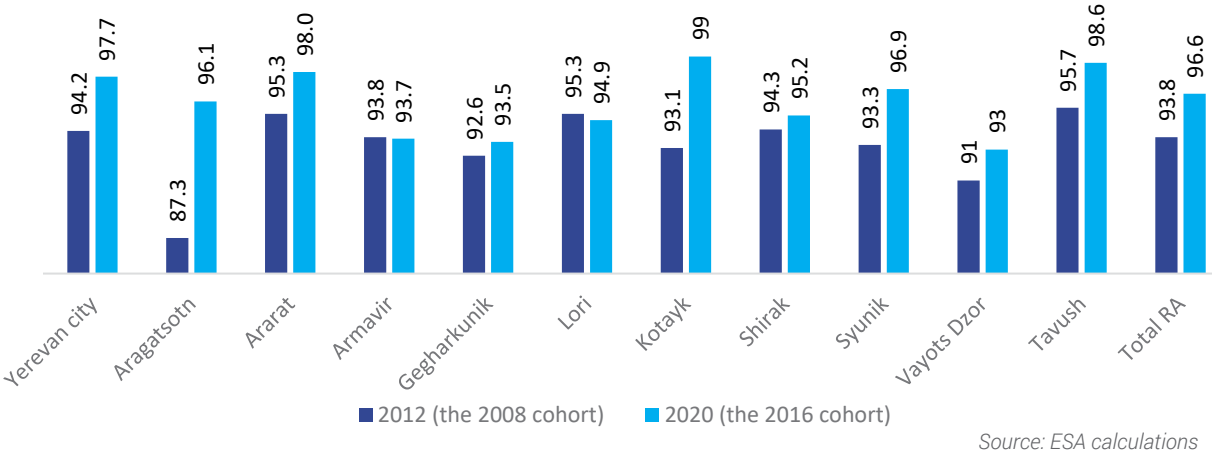
COHORTS	2012	2013	2014	2015	2016
Both sexes	93.9%	93.1%	93.0%	95.0%	96.6%
Male	94.2%	92.9%	93.0%	95.0%	96.2%
Female	93.6%	93.2%	93.1%	95.0%	97.0%

*The number of pupils who reached the 5th grade, expressed as a percentage of their number when they entered the 1st grade

Source: ESA calculations

In the lower secondary education, the ratio of 9th graders to 5th graders was 95.1% for the 2012 cohort, while for the 2016 cohort the ratio improved by about 3 percentage points, reaching 98.0% (Table 426). In terms of gender, access to the 9th grade, the last grade of lower secondary education, was lower among boys than among girls, with the difference of 1.6 percentage points.

FIGURE 4-18 ACCESS TO THE 5TH GRADE, YEREVAN AND THE MARZES (BOTH SEXES, %)



Source: ESA calculations

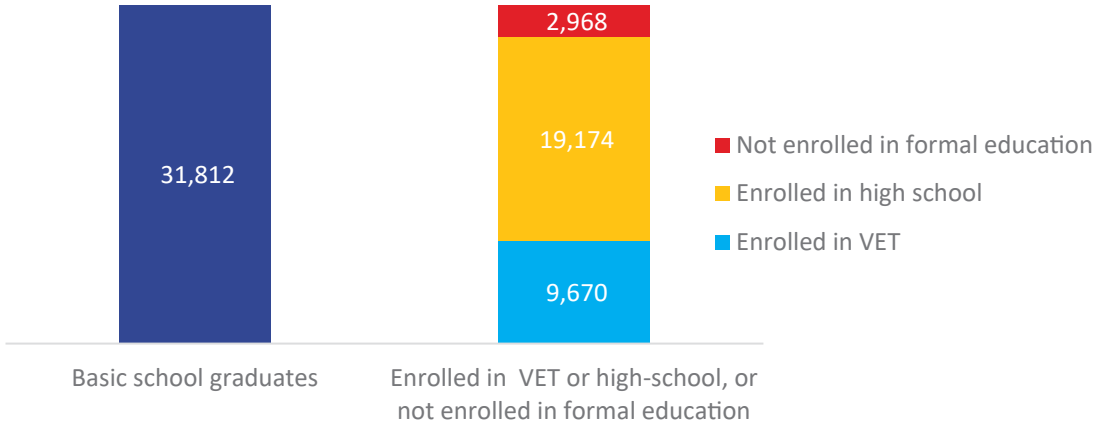
Regarding the transition from lower to upper secondary education, since 2010, the number of pupils enrolled in the 10th grade (the first year of high school) has been about 10.000-12.000 less than in the 9th grade. This is due to the fact that a significant part (about a third in 2020 (Figure 419) of lower secondary (basic) school graduates continue their education in vocational (handicraft) and middle vocational institutions.

TABLE 4-26 ACCESS TO THE 9TH GRADE, THE 2012-2016 COHORTS (RATIO OF 9TH TO 5TH GRADERS, %)

COHORTS	2012	2013	2014	2015	2016
Both sexes	95.1%	94.4%	94.0%	96.2%	98.0%
Male	95.1%	93.9%	93.1%	96.0%	97.2%
Female	95.1%	94.9%	95.0%	96.3%	98.8%

Source: ESA calculations

FIGURE 4-19 TRANSITION FROM LOWER TO UPPER SECONDARY EDUCATION, 2020



Source: Armstat, 2021d

SCHOOL SUPPLY AND PUPIL-TO-TEACHER RATIO

Over the past decade, the number of public general education schools has decreased both in Yerevan and in the marzes. Since 2010, 48 state general education institutions have been closed, of which 9 were in Yerevan, 28 in urban and 11 in rural settlements of the marzes (Table 4-27).

TABLE 4-27 NUMBER OF STATE GENERAL EDUCATION SCHOOLS IN THE MARZES AND YEREVAN, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Yerevan	220	219	216	216	220	220	220	219	215	209	211
Marzes	1,182	1,177	1,172	1,173	1,171	1,170	1,165	1,155	1,148	1,144	1,143
Marzes, urban	312	310	308	309	308	308	301	293	289	287	284
Marzes, rural	870	867	864	864	863	862	864	862	859	857	859
Total RA	1402	1396	1388	1389	1391	1390	1385	1374	1363	1353	1354

Source: Armstat, 2021d

In the marzes, the largest number of schools have been closed in Shirak (12 schools), followed by Syunik (6 schools). Only in Ararat and Tavush not a single school was closed.

School closures were justified by the decline in the school-age population caused by migration and declining birth rates.

The last wave of closures was scheduled to start in 2017, as the Government's decision of August 2017 envisaged the closure of an additional 16 schools (6 in Yerevan, 10 in the marzes) in the context of reorganization (Government, 2017b).

The need to optimize schools was justified by the underload. During the first stage, it was planned to merge urban schools of up to 300 pupils, and with the next stage, of up to 450 students. It is noteworthy that in 2017 there were 985 schools in Armenia with up to 300 students (of which 461 schools with up to 100 students), which accounted for 69% of schools existing at the time (Public Policy Institute, 2018).

A study conducted by the Public Policy Institute found that, in previous cases of school reorganization, the time needed to travel from home to school had doubled on average (Public Policy Institute, 2018).

After the change in Government in 2018, the optimization process was stopped.

TABLE 4-28 NUMBER OF NON-STATE GENERAL EDUCATION SCHOOLS IN THE MARZES AND YEREVAN, 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Yerevan	39	36	37	36	37	39	39	39	38	40	41
Marzes Urban	7	8	9	8	8	7	7	7	7	6	6
Marzes Rural	2	1	1	1	1	2	1	1	1	1	1
Total RA	48	45	47	45	46	48	47	47	46	47	48

Source: Armstat, 2021d

Private schools are mainly concentrated in Yerevan. Their number has been largely unchanged over the past decade (Table 4-28).

The design capacity of state schools stood at 645,119 student-places in 2020, down 3.7% from 2010, corresponding to the share of closed schools, at 3.4%. In Yerevan, the design capacity of state schools remained virtually unchanged over the past decade, amounting to 166,021 student-places in 2020. Therefore, the design capacity of state schools decreased almost exclusively in the marzes, from 503,378 student-places in 2010 to 479,098 student-places in 2020, a decrease of 4.8% (Armstat, 2022).

> In 2020, within the urban settlements of the marzes, the school supply was 84.7%, while the school load was 106.3%

TABLE 4-29 DESIGN CAPACITY OF STATE AND NON-STATE GENERAL EDUCATION SCHOOLS, 2010-2020

	2010	2012	2014	2016	2018	2019	2020	2010-2020
Yerevan	166,215	188,136	185,149	183,948	181,585	180,105	180,525	+14,310
Marzes	503,378	495,595	491,409	498,380	483,831	481,891	481,718	-21,660
Total RA	669,593	683,731	676,558	682,328	665,416	661,996	662,243	-7,350

Source: Armstat, 2022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Meanwhile, the design capacity of non-state schools was 17,124 students in 2020, up 25.9% from 2011, with 84.7% of this design capacity in Yerevan in 2020.

Overall, in 2020, the total design capacity of all schools in Armenia (state and non-state) was 662,243 student-places, which was lower than the 2010 capacity by 7,350 student-places (or only 1.1%). Moreover, in Yerevan, the design capacity has actually increased over the past decade (due to an increase in the design capacity of private schools), while decreasing in the marzes (due to the closure of public schools) (Table 4-29).

TABLE 4-30 SCHOOL SUPPLY IN 2020

Settlement	Schools	Population (6-17)	Design capacity	enrollment
Total	1,402	479,784	662,243	399,294
Yerevan	252	162,617	180,525	132,904
Marz urban	290	136,303	115,388	122,614
Marz rural	860	180,864	366,330	143,776

Source: ESA calculations

TABLE 4-31 SCHOOL SUPPLY IN 2020 BY TYPE OF SETTLEMENT

	School supply*	School load**
Total	138.0%	60.3%
Yerevan	111.0%	73.6%
Marz urban	84.7%	106.3%
Marz rural	202.5%	39.2%

*School supply = design capacity / population (6-17). **School load = enrollment / design capacity

Source: ESA calculations

In 2020, the school supply was the lowest in the urban settlements of the marzes (84.7%), accordingly, the load there was the highest (106.3%) (Table 4-31).

In the rural settlements of the marzes, the situation was diagonally the opposite. There, the supply in 2020 was twice the demand – 202.5%, while the load was just 39.2%. However, out of 954 rural settlements in Armenia in 2020, there were no schools in 141 settlements[24], which accounted for 14.8% of rural settlements. Therefore, in these places, pupils must attend school in a neighboring settlement.

HOME-TO-SCHOOL DISTANCE | Primary schools are often within walking distance of households. According to a study conducted by the American University of Armenia in 2012, among 450 pupils in Yerevan and all the marzes, 75% of children go to school on foot, 12% - by family car, and 9% - by public transport. The average time to get to school was 12 minutes, and 92% of respondents spent 20 minutes or fewer to get to school (AUA, 2012).

> Compared to the benchmark countries, the pupil-to-teacher ratio in Armenia was the lowest in upper secondary education, but was one of the highest in primary and lower secondary education

The issue of home-to-school distance was explored in ILCS 2016. According to the results of this study, in rural settlements, the distance from home to school was less than one kilometer for 71.8% of households. Meanwhile, the distance was four kilometers or more for 2.6% of households and 83.1% of children went to school on

[24] Based on the EMIS database.

foot, while 16.7% - by car or bus (Armstat, 2017).

According to the results of ILCS 2018, in rural settlements, the home-to-school distance was less than one kilometer for 74.8% of households and was four kilometers or more for 2.7% of households. Meanwhile, 88.3% of children went to school on foot (Armstat, 2019).

PUPIL-TO-TEACHER RATIO | In 2020, there were 31,130 teachers in Armenia in both state and non-state general education schools, of which 95.6% were in state schools (Armstat, 2022). One-fourth of the teachers in state schools (24.8%) were in Yerevan (Table 4-32), despite only 18.0% of schools being in Yerevan.

TABLE 4-32 NUMBER OF TEACHERS IN STATE GENERAL EDUCATION SCHOOLS, 2010-2020

	2010	2012	2014	2016	2018	2019	2020
Yerevan	9,675	9,416	8,955	8,903	7,274	7,272	7,384
Female	8,756	8,468	8,084	8,073	6,780	6,778	6,882
Marzes	30,701	30,150	28,605	27,904	23,002	22,613	22,385
Female	25,440	24,901	23,877	23,351	20,152	19,845	19,667
Total RA	40,376	39,566	37,560	36,807	30,276	29,885	29,769

Source: Armstat, 2022

The pupil-to-teacher ratio in state general education institutions was 12.7 in 2019. The ratio was highest in Yerevan, where it was 16.6, while in the marzes it ranged from 8.5 (in Aragatsotn) to 14.5 (in Ararat). Compared to 2010, this ratio has increased both in Yerevan and in all the marzes (Annex 2.4, Table 3).

In the non-state schools the pupil-to-teacher ratio was 8.6 in 2019 against 5.3 in 2010 (Annex 2.4, Table 4).

TABLE 4-33 DISTRIBUTION OF SCHOOLS BY SIZE, 2020

number of pupils at school	Schools*		Teachers**		Teacher-to – school ratio	Non-teacher-to-school ratio***
	Number	%	Number	%		
Less than 20	89	6.3%	431	1.4%	5.3	8.6
21-50	154	11.0%	1,464	4.8%	9.6	10.9
51-100	188	13.4%	2,459	8.1%	13.1	13.9
101-150	149	10.6%	2,330	7.7%	15.6	15.0
151-300	332	23.7%	6,183	20.3%	18.7	17.8
301-500	252	18.0%	6,883	22.6%	27.4	23.0
501-1000	191	13.6%	7,488	24.6%	39.2	28.6
1001 & more	47	3.4%	3,209	10.5%	68.3	45.7
Total	**1,402**	**100.0%**	**30,447**	**100.0%**	**21.7**	**18.9**

*Total number of schools of corresponding size

**Total number of teachers in schools of corresponding size

***Number of non-teaching staff per school of corresponding size

Source: ESA calculations based on EMIS data

TABLE 4-34 DISTRIBUTION OF SCHOOLS BY PUPIL-TO-TEACHER RATIO, 2020

Number of pupils at school	Pupils*		Pupil-to-school ratio	Pupil-to-teacher ratio
	Number	%		
Less than 20	1,046	0.3%	11.8	2.9
21-50	5,444	1.3%	35.4	4.0
51-100	14,073	3.5%	74.9	6.6
101-150	18,525	4.6%	124.3	8.4
151-300	73,249	18.1%	220.6	12.9
301-500	98,039	24.2%	389.0	14.8
501-1000	131,821	32.5%	690.2	18.3
1001 & more	62,948	15.5%	1339.3	21.1
Total	**405,145**	**100.0%**	**289.0**	**13.3**

*Total number of pupils in schools of corresponding size

Source: ESA calculations based on EMIS data

TABLE 4-35 PUPIL-TO-TEACHER RATIO IN 2020 BY TYPE OF SETTLEMENT

Settlement	pupils		Teachers		Pupil-to-teacher ratio
	Number	%	Number	%	
Yerevan	135,321	33.4%	8,387	27.5%	16.1
Marz urban	123,184	30.4%	8,008	26.3%	15.4
Marz rural	146,640	36.2%	14,052	46.2%	10.4
Total	**405,145**	**100.0%**	**30,447**	**100.0%**	**13.3**

Source: ESA calculations based on EMIS data

TABLE 4-36 PUPIL-TO-TEACHER RATIO IN BENCHMARK COUNTRIES BY EDUCATION LEVEL, 2018 OR LATEST

Country	pre-primary	primary	Lower secondary	Upper Secondary	Secondary
Armenia	6.3	15.4	12.0	4.5	8.0
Estonia	..	11.3	8.6	..	9.2
Georgia	..	9.0	8.3	6.9	7.6
Lithuania	9.7	13.5	7.4	8.8	7.8
Latvia	9.7	11.5	7.5	9.2	8.3
Moldova	11.9	17.9	9.8	10.1	9.9
Albania	17.1	17.6	9.9	13.4	11.2
Slovenia	9.1	13.8	5.9	15.2	9.7
Slovakia	12.0	15.5	10.9	11.3	11.1

Source: WB, 2022

Armenia has a significant number of tiny schools. In 2020, 6.3% of schools had 20 or fewer pupils. These tiny schools had a teacher-to-school ratio of 5.3 while the non-teaching staff-to-school ratio was 8.6. Additionally, the average number of pupils in these school was only 11.8, while the pupil-to-teacher ratio was 2.9. In these schools, only 0.3% of pupils were enrolled (Table 4-33, Table 4-34).

In 2020, the pupil-to-teacher ratio was about 50% higher in the urban settlements of the marzes, compared to rural settlements. Accordingly, the share of pupils of the rural settlements (36.2%) was significantly lower from the share of teachers (46.2%) (Table 4-35).

Compared to the benchmark countries, the pupil-to-teacher ratio in Armenia was the lowest in upper secondary education but was one of the highest in primary and lower secondary education (Table 4-36). In particular, in 2018, the pupil-to-teacher ratio in upper secondary education was 4.5 in Armenia, while being 6.9 in Georgia and 10.1 in Moldova. At the same time, the ratio in lower secondary education was 12.0 in Armenia, which was the highest among the observed peer and benchmark countries. As per primary education, the ratio was 15.4 in Armenia, while it was 9.0 in Georgia and 17.9 in Moldova.

CHAPTER 5

ANALYSIS OF THE IMPACT OF SCHOOL (PRESCHOOL) EDUCATION ON NATIONAL ECONOMIC AND HUMAN DEVELOPMENT GOALS

The main purpose of this chapter is to analyze the extent to which education contributes to the achievement of economic and social development goals in Armenia.

Human capital - knowledge, skills, and qualifications of workforce - attained through education, has a direct impact on a country's economic growth and human development (Hanushek & Woessmann, 2015).

The current program of the Armenian Government recognizes that the development of higher education and science is closely linked to the Sustainable Development Goals of the country (Government, 2021). Along with other national priorities, the Government of Armenia has prioritized knowledge creation and the strengthening of the education-science-labor market link for the period of 2021-2026. The program also emphasizes the importance of diversifying the labor market by improving the quality of vocational education.

This chapter is comprised of two sections:

- The first section, entitled "Economic Impact of Education", analyzes the relationship between education and the employability of school and higher education graduates and the extent to which the education system is aligned with the labor market requirements.
- The second section, entitled "Social Impact of Education," evaluates the impact of education on health-related behavior, fertility, as well as civic and social attitudes.

SECTION 5-1: ECONOMIC IMPACT OF EDUCATION

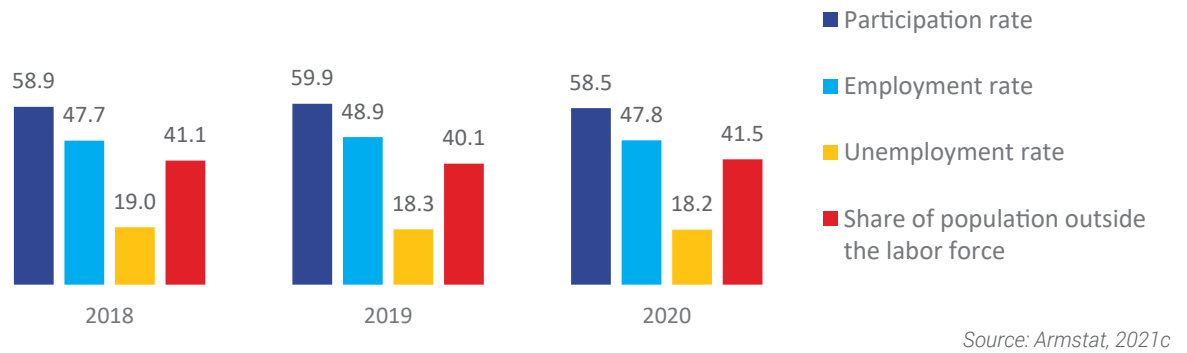
This section analyzes the economic impact of education in Armenia with the following subsections: description of the labor market, its structure, and dynamics; employability of graduates and the economic return of education; the training-employment balance; and the anticipation of future labor market needs.

DESCRIPTION OF THE LABOR MARKET, ITS STRUCTURE AND DYNAMICS

In 2020, labor resources in Armenia amounted to 2.2M people out of the 2.96M de jure population or 74.2% (Annex 2.5, Table 1) (Armstat, 2021c). Meanwhile, the economically active population was made up of 1.29M people, or 58.5% of the labor resourc-

es (participation rate)[25] (Figure 5-1).

FIGURE 5-1 LABOR MARKET INDICATORS, 2018-2020, % OF LABOR RESOURCES/WORKING-AGE POPULATION



Source: Armstat, 2021c

The economically active population in Armenia has been steadily declining over the past decade, though there was a slight increase between 2016 and 2019 (Figure 5-2). The change in the number of employed occurred in parallel with the change in the number of economically active population.

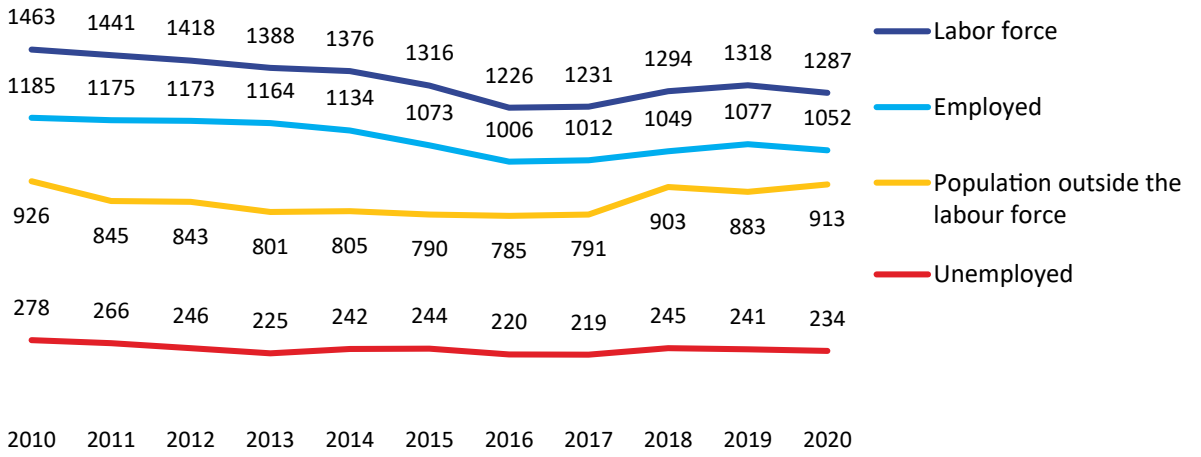
The share of people outside the labor force as a percentage of labor resources has hovered just below 40% for most of the last decade, reaching 41.5% in 2020.

> In 2020, among 15-19-year-olds, 19.6% of men and 10.7% of women were not in employment, education or training

Meanwhile, the unemployment rate remained high at 18.2% in 2020. Broken down by types of settlements, the unemployment rate in 2020 was 22.3% in urban and 12.1% in rural settlements. This disparity is partly due to significant internal migration to Yerevan.

A large portion of the youth was not in employment, education or training (NEET). According to the Armstat estimates, in 2020, 9.5% of 15-19-year-olds, 36.2% of 20-24-year-olds, and 44.5% of 25-29-year-olds were NEET (Armstat, 2021c).

FIGURE 5-2 EVOLUTION OF LABOR RESOURCES IN ARMENIA, 1000 PEOPLE, 2010-2020



Source: Armstat, 2022

[25] Employment rate - The ratio of the employed to the working age population.
Unemployment rate - The number of unemployed people as a percentage of the labor force. The unemployed are people of working age who are without work, are available for work, and have taken specific steps to find work.
People outside the labor force - Persons neither employed nor unemployed, not available or searching for work for a variety of reasons.
Participation rate - Labor force divided by the total working-age population.

There were also significant differences in NEET rates by gender and type of settlement. Among 1529yearolds, the proportion of men in NEET was 22.6%, while among women – 39.9%. By type of settlement, the NEET rate among 15-29-year-olds was 28.0% in urban settlements and 34.9% in rural settlements (Armstat, 2021c).

The time-related underemployment rate was estimated at 2.0% in 2020 (Armstat, 2021c). Time-related (visible) underemployment includes those who are involuntarily working less than the normal duration of work determined for the activity, who are seeking or are available for additional work (OECD, 2002).

In 2020, the average working hours per week were 37.8, slightly less than the typical 40-hour full-time employment (Armstat, 2021c). However, there was a wide gender gap as men worked an average of 41.5 and women, 33.7 hours per week. A similar trend has been observed in the last decade. This indicates gender disparity in the labor market, with women working fewer hours per week.

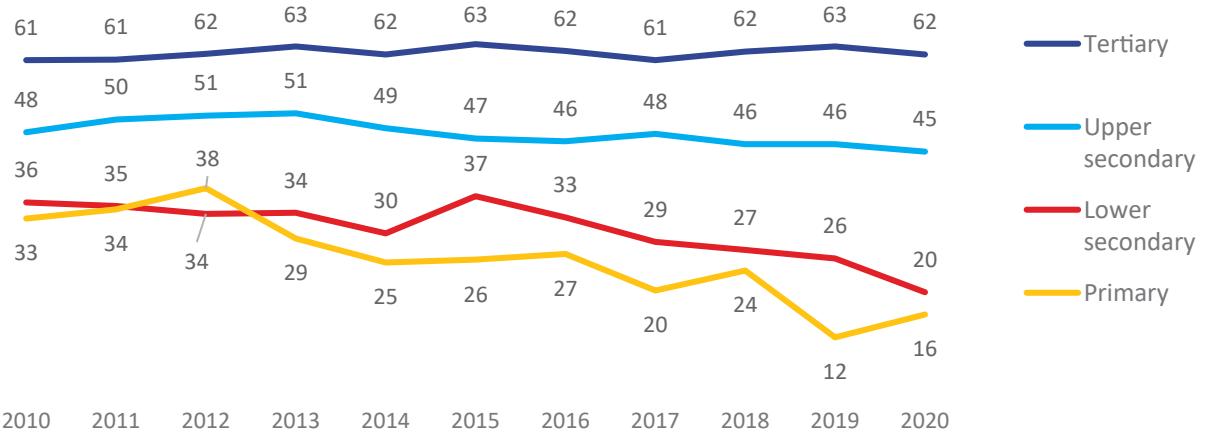
EMPLOYABILITY OF GRADUATES AND THE ECONOMIC RETURN OF EDUCATION

This section focuses on the educational attainment of the economically active population and the economic return of education. The private economic return of education is estimated based on wage/income received by level of educational attainment.

> In 2020, the average monthly net wage/income of people with a tertiary education was 25.7% higher than that of people with a lower level of education

The employment rate among people with tertiary education is consistently higher than those with a lower level of education (Figure 5-3). In 2010-2020, the employment rate of individuals with tertiary education was 61.8% on average, while those with upper secondary education - 47.8%. Thus, there is evidence that having a higher education increases the likelihood of being employed.

FIGURE 5-3 EMPLOYMENT RATE BY EDUCATIONAL ATTAINMENT, % OF WORKING AGE POPULATION OF THE SAME GROUP, 2010-2020



Source: Armstat, 2022

Recently, the unemployment rate among people with primary or lower secondary education has increased, while among those with tertiary education, it has declined (Figure 5-4). This may indicate that a lower educational attainment increases the chances of being unemployed.

As mentioned, average earnings by educational level are used to estimate the private economic return on investment in education. In 2020, the average monthly net wage/income of people with a tertiary education was 25.7% higher than that of people with a lower level of education (Figure 5-5).

A recent report (EV Consulting, 2019) highlights the role of educational attainment and the quality of the labor force in economic growth. A comparison of the Armenian and EU workforce by level of education and sector of occupation shows that in 2017, the proportion of the Armenian workforce with a higher education is well in line with

the EU benchmark (Figure 5-6).

However, the mismatch is apparent in the case of upper secondary and vocational education. The proportion of the workforce with upper secondary or vocational education employed in agriculture (86%) and manufacturing (72%) is significantly higher than the EU benchmark. Although there are few vacancies in these sectors (according to the public employment service), as discussed later in this section.

FIGURE 5-4 UNEMPLOYMENT RATE BY EDUCATIONAL ATTAINMENT, %, 2010-2020

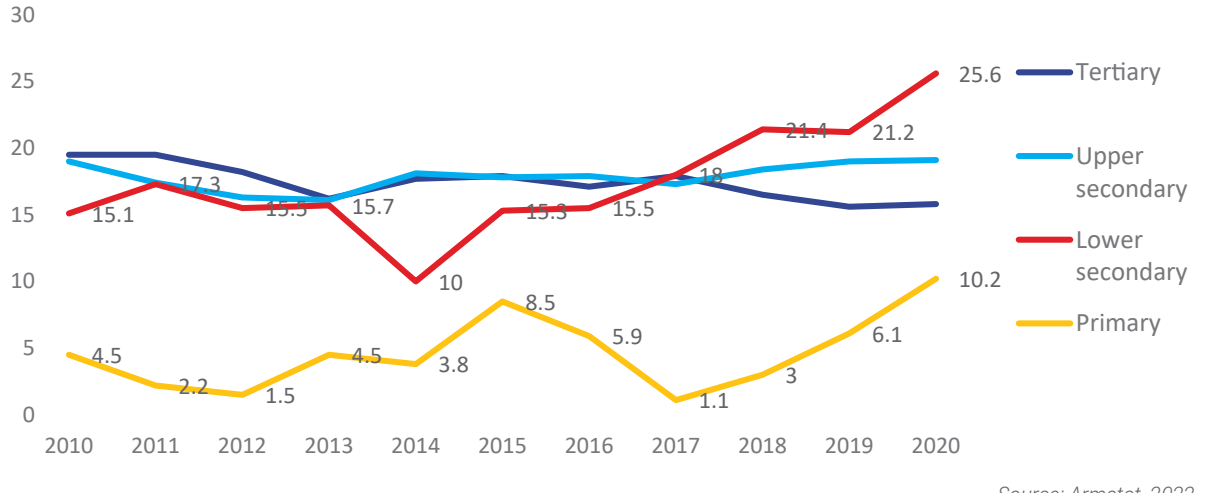
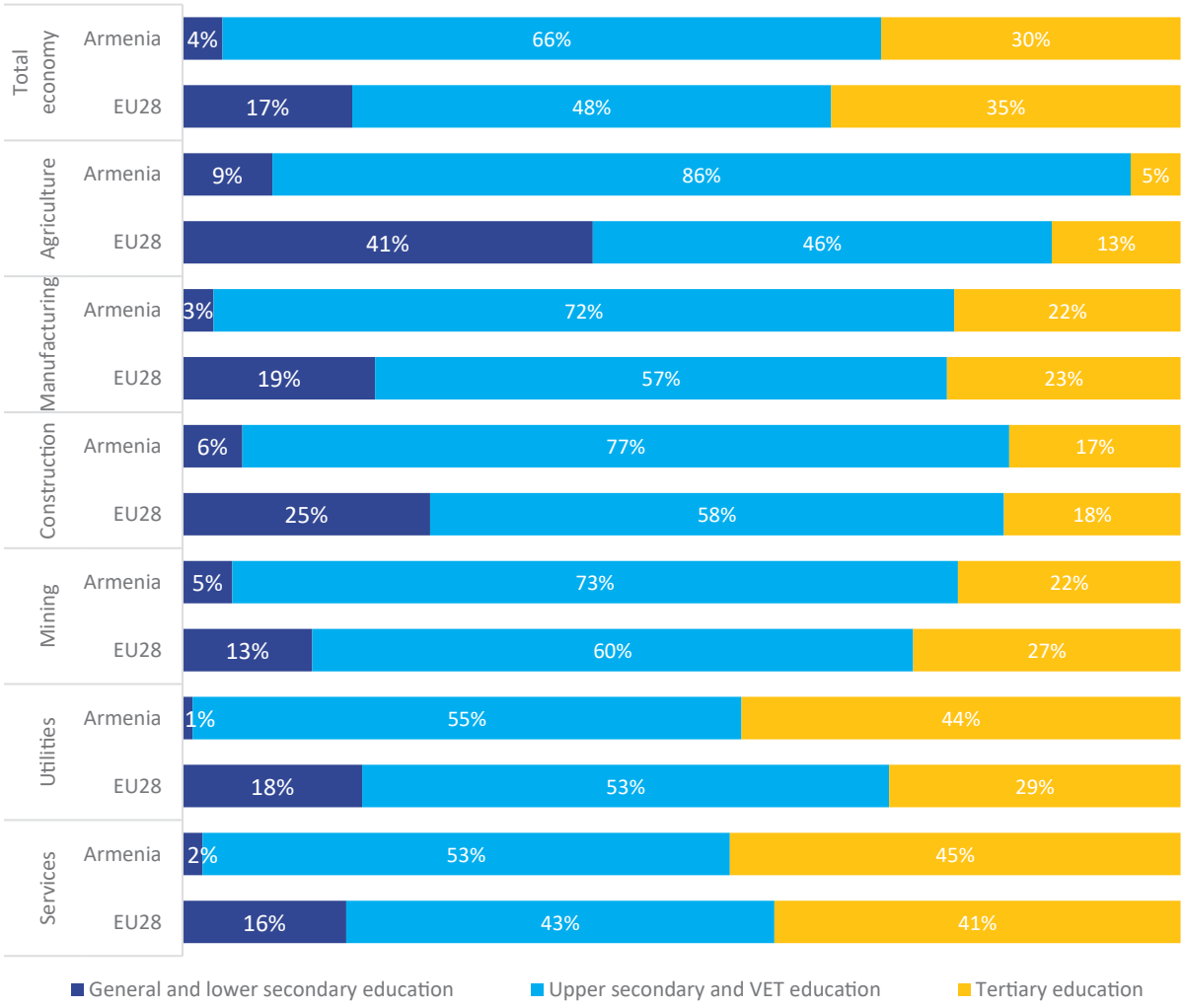


FIGURE 5-5 AVERAGE MONTHLY NET WAGE/INCOME BY EDUCATIONAL ATTAINMENT, AMD, 2020

Source: Armstat, 2021c

FIGURE 5-6 WORKFORCE BY EDUCATIONAL ATTAINMENT & SECTOR OF OCCUPATION, %, 2017



Source: EV, 2019

THE TRAINING-EMPLOYMENT BALANCE

In 2020, the gross enrollment ratio for the first level of tertiary education was 54.4%, and for the second level, it was 15.7% (Armstat, 2022). Those with higher levels of educational attainment have higher incomes than those with lower levels of education. Thus, Armenia's enrollment rate in tertiary education may be a concern, especially if access to tertiary education is unevenly distributed among income groups of the population.

> Armenian higher education institutions do not properly provide soft skills such as communication, complex problem solving, leadership, teamwork, and others

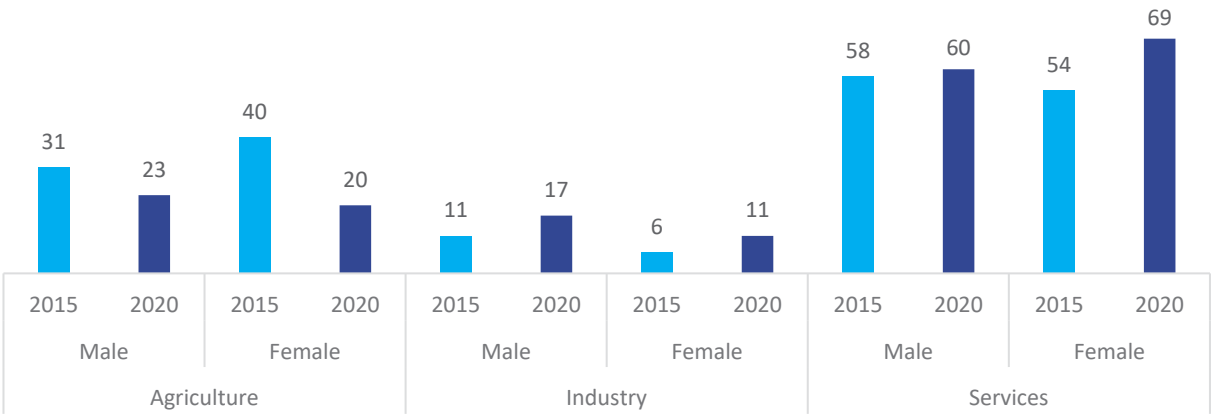
The service sector is the largest employer (Figure 5-7). In 2020, 60% of men and 69% of women were employed in the service sector. For both men and women, agriculture was the second largest employer, while industry was the third.

Since 2010, there has been a steady increase in the number of vacancies in the service sector (Figure 5-8). The number of vacancies in the industry was relatively stable, while there were very few vacancies in agriculture and construction. Overall, there were about 9,200 vacancies in all sectors in 2020 (including in agriculture) (Armstat, 2022). Comparison of the number of available vacancies with the number of graduates (15,560 in higher education and 8,638 in VET in 2020) (Armstat, 2021d) shows that labor supply exceeds demand.

A recent study (Baghdasaryan, 2021) shows that there is both horizontal and vertical mismatch in the Armenian labor market. People with vocation-

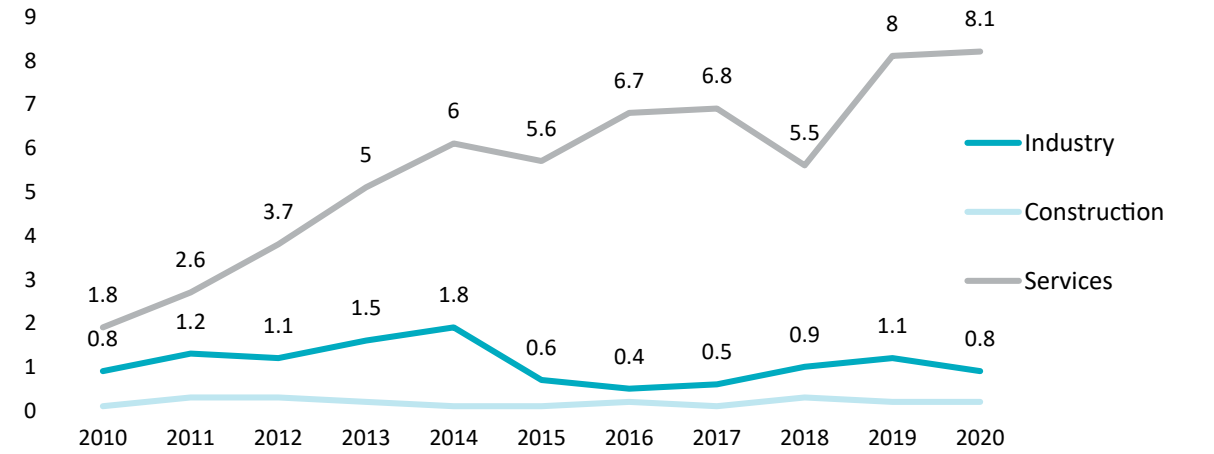
al education compared to higher education are 20% more likely to be horizontally mismatched, meaning not working in their specialization. In terms of vertical mismatch (education is less or more than required for the job), the study shows that women tend to be more over-qualified (30%) than men (20%). Meanwhile, over-qualification results in wage penalty, which in turn contributes to the gender wage gap.

FIGURE 5-7 EMPLOYMENT BY SECTOR OF OCCUPATION AND GENDER, % OF TOTAL, 2015-2020



Source: Armstat, 2021c

FIGURE 5-8 NUMBER OF VACANCIES BY SECTOR OF ECONOMY, 1000 people, 2010-2020

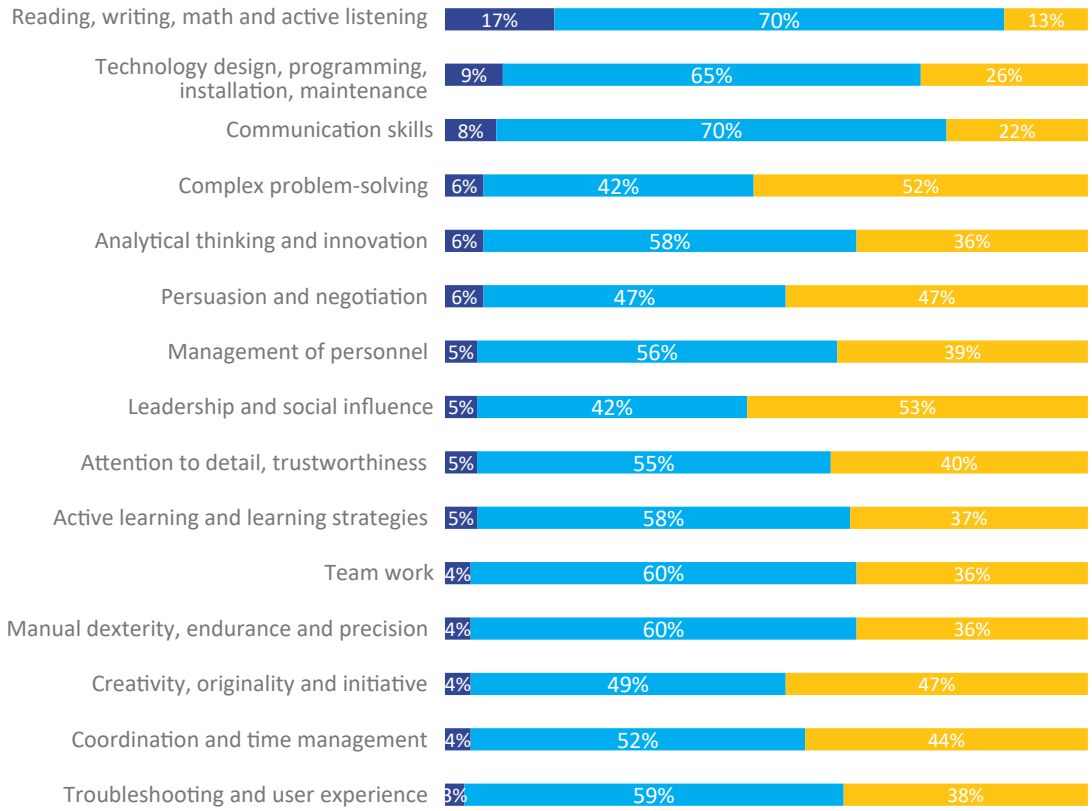


Source: Armstat, ICF, 2017

There is also a mismatch between the skills provided by educational institutions and the skills demanded in the labor market. A recent study (EV, 2019) showed that the demand for vocational education is particularly high in the tourism and manufacturing sectors. But because of the low-quality of vocational education and the mismatch of skills required by employers, as a rule, these vacancies are filled by graduates of higher educational institutions.

The lack of soft skills among graduates of vocational and higher education institutions, which are usually required by employers, is critical. Armenian higher education institutions (HEIs) do not provide or only moderately provide soft skills such as communication, complex problem solving, leadership, teamwork, and others (Figure 5-9).

FIGURE 5-9 TYPES OF SKILLS PROVIDED BY ARMENIAN HEIs, %



Source: EV, 2019

ANTICIPATION OF FUTURE LABOR MARKET NEEDS

In Armenia, among the employed population, there is a clear trend towards an increase in the number and proportion of people with higher education. In 2020, the tertiary-educated accounted for 33.5% of the employed population, up from 29.1% in 2015 (Table 5-1). The absolute increase was 40.600 people, while the relative increase was 4.4 percentage points.

TABLE 5-1 EMPLOYED POPULATION BY EDUCATIONAL ATTAINMENT, 2015-2020

Level of education	2015 (1000 persons)	2015 (%)	2020 (1000 persons)	2020 (%)	2015-2020 change (1000 pers.)	2015-2020 change (% pt.)
Tertiary	311.7	29.1%	352.3	33.5%	40.6	4.4% pt.*
VET	241.6	22.5%	262.8	25.0%	21.2	2.5% pt.
Upper secondary	461.7	43.0%	399.1	37.9%	-62.6	-5.1% pt.
Lower second., primary	57.6	5.4%	38.2	3.6%	-19.4	-1.8% pt.
Total	**1072.6**	**100.0%**	**1052.4**	**100.0%**	**-20.2**	**...**

*percentage point

Source: Armstat, 2021c

> Services, among them ICT, is the most promising sector in terms of future employment growth

In 2020, those with upper secondary education accounted for 37.9% of the employed population, down from 43.0% in 2015. The absolute decrease was 62.400 people, while the relative decrease was 5.1 percentage points.

Thus, most of the employed population is made up of people with higher or vocational education, and their share continues to increase, reaching 58.5% in 2020 against 51.6% in 2015. This development indicates an intensified demand for highly skilled workers. This shift is all the more striking when taking into account that the total number of employed people for the period of 2015-2020 decreased.

PROMISING SECTORS | The service sector is the largest employer and its contribution to the labor demand continues to grow. In 2020, services accounted for 57.2% of employment, up from 44.0% in 2010 (Table 5-2). Thus, 80.400 additional jobs were created in the service sector, with a 15.4% growth over the 2010-2020 period.

Among services, information and communication has recorded one of the highest growth rates. In 2019, 31,000 people were employed in this sector, 11,900 people more than in 2015, a growth of 12.9% per year.

The second most promising sector is industry, where employment increased by 25.100 people or 20.8%, raising the share of industry in employment to 13.8% in 2020 against 10.2% in 2010.

Meanwhile, employment in agriculture declined sharply, indicating an enhanced efficiency of the sector.

The offer of higher education and VET courses targeting the sub-sectors with the most value-adding potential needs to be reinforced to meet increased demand and contribute to economic growth.

TABLE 5-2 EMPLOYMENT BY ECONOMIC SECTOR, % OF TOTAL, 2010-2020

Sector	2010 (1000 persons)	2010 (%)	2020 (1000 persons)	2020 (%)	2010-2020 change (1000 pers.)	2010-2020 change (% pt.)
Agriculture	457.4	38.6%	229.6	21.8%	-227.8	-16.8% pt.*
Industry	120.6	10.2%	145.7	13.8%	25.1	3.7% pt.
Construction	85.8	7.2%	75.1	7.1%	-10.7	-0.1% pt.
Services	521.4	44.0%	601.8	57.2%	80.4	13.2% pt.
Total	**1185.2**	**100.0%**	**1052.4**	**100.0%**	**-132.8**	**…**

*percentage point

Source: Armstat, 2022

SECTION 5-2: SOCIAL IMPACT OF EDUCATION

Education has many positive social externalities, including health, reproductive behavior, high-risk behavior, civic attitudes, and more (Münich & Psacharopoulos, 2018; OECD, 2006).

The first part of this section discusses the correlation between education and birth rates/reproductive behavior. The second part analyzes the effects of education on civic behavior and attitudes in Armenia.

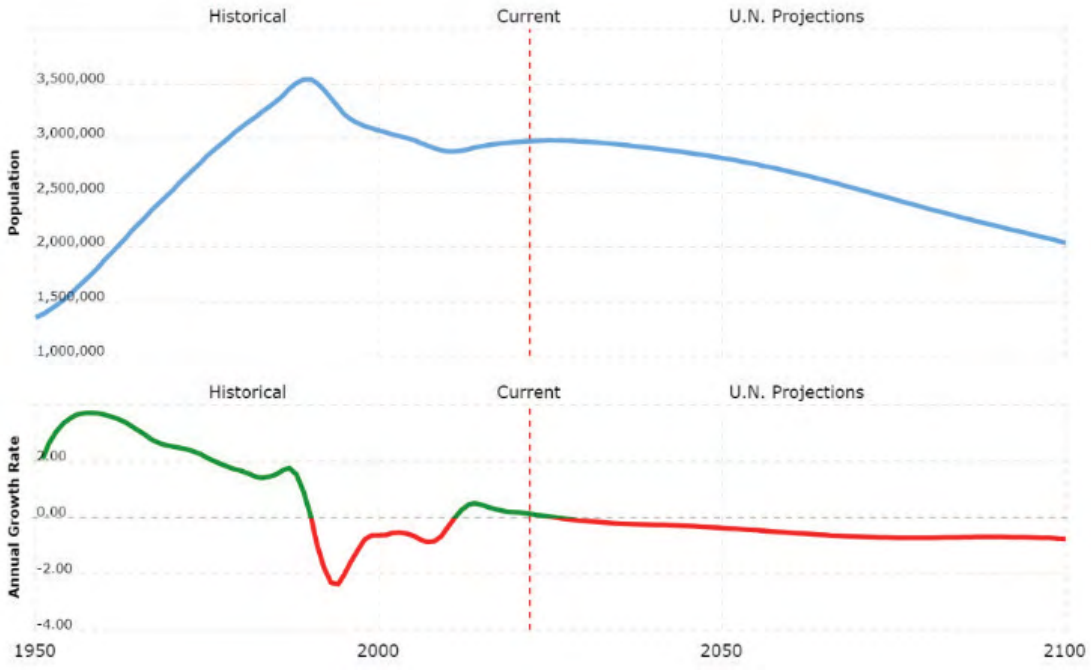
IMPACT OF EDUCATION ON FERTILITY AND HEALTH-RELATED BEHAVIOR

Armenia's population is declining, and this decline is projected to continue for the foreseeable future (Figure 5-10). In 2015-2020, the crude birth rate in Armenia was 14.2 (births per 1,000 population), down from 15.1 births during the 2010-2015 period (UN, 2019).

The Armenian government prioritizes increasing the birth rate (Government, 2021). One way to ensure an increase in the birth rate is to provide incentives to young families. In 2020, the total fertility rate in Armenia was 1.656 (Armstat, 2021e), which is well below replacement fertility rate (at least 2.1 children per women). The below-replacement fertility rate poses a significant challenge, as Armenia faces the prospect of a declining population, which may be associated with a deterioration in long-run economic growth prospects.

Teenage pregnancy is low, with rural communities having a teen (15-19) fertility rate of 18.5 in 2020, compared to 11.1 in urban communities (Figure 5-11).

FIGURE 5-10 ARMENIA: TOTAL POPULATION, 1950-2100



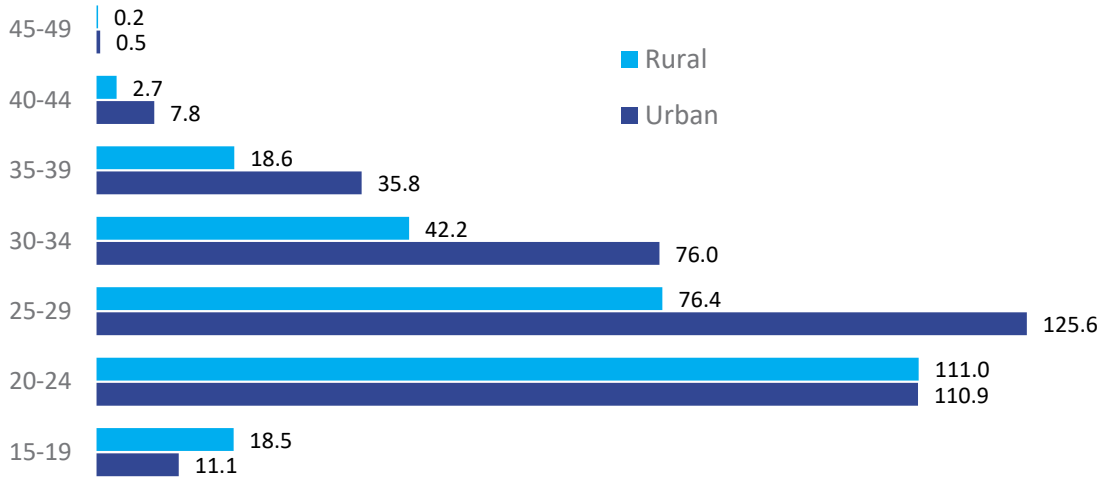
Source: UN, 2019

What follows in this subsection is based on data from the DHS conducted in the 2015-2016 period (Armstat, Ministry of Health, ICF, 2017).

The fertility rate in Armenia, depending on the level of education, is aligned with the mainstream theoretical approach. At higher levels of educational attainment, the total fertility rate, as well as the average number of children ever born to women between the ages of 40 to 49, decreases (Figure 5-12). The difference between the mean number of children ever born to women aged 40-49 (2.2 children per woman, RA total

for 20152016 period) and the total fertility rate[26] (1.7 children per woman, RA total for 2015-2016) indicates that the fertility rate has fallen by about half a child over the past 30 years.

FIGURE 5-11 AGE-SPECIFIC FERTILITY RATE, BIRTHS PER 1000 WOMEN IN THAT AGE GROUP, 2020

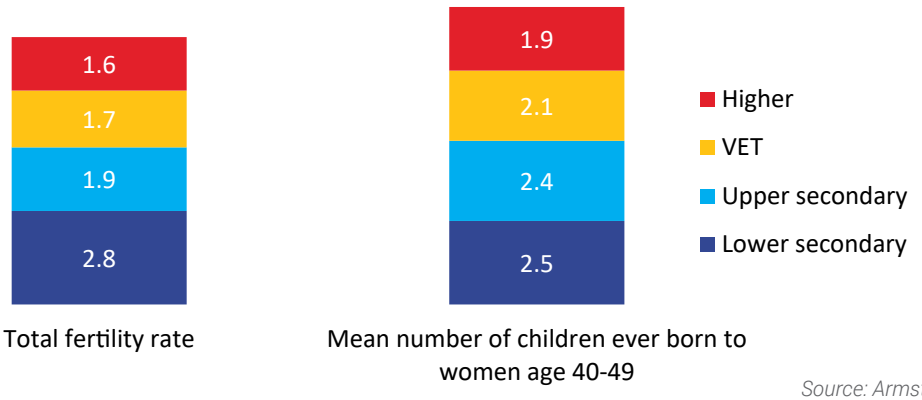


Source: Armstat, 2021e

In terms of knowledge of contraception, most women (97%) and men (99%) knew at least one contraception method.

According to DHS 2015/2016, the higher the level of education, the lower the total fertility rate of women in Armenia

FIGURE 5-12 FERTILITY BY EDUCATIONAL ATTAINMENT, %, 2015-2016



Source: Armstat, ICF, 2017

There were differences in the use of modern contraceptive methods, depending on the level of education. Married women aged 15-49 with higher education used modern contraceptive methods more frequently (35.3% in that group) than those with lower secondary (20.5%) education. Accordingly, the use of traditional contraceptive methods was higher among married women with lower secondary education (38.5%) compared to women with higher education (20.6%).

In 2013-2015, the total abortion rate was 0.3 for women with higher education and 0.8 with upper secondary education. The reason for abortion was an unwanted child among 43.4% of women with higher education and 70.5% with upper secondary education.

The proportion of women with a live birth in 2011-

[26] The total number of children that would be born to each woman if she were to live to the end of her child-bearing years and give birth to children in alignment with the prevailing age-specific fertility rates.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IMPACT OF EDUCATION ON TRUST, CIVIC ATTITUDES AND SELF-RATED HEALTH STATUS

Trust and positive civic attitudes in the society are crucial for economic growth and prosperity (Fukuyama, 1995; Knack & Keefer, 1997).

> Education improves people's attitudes towards civic engagement and increases their trust in public institutions.
>
> Educated people have a higher self rated health status

To better understand the social impact of education in Armenia, the dependence of people's trust in public institutions, civic attitudes, and self-rated health on the level of education of a person was analyzed[27]. The analysis also took into account the age of the person, the type of settlement in which he/she resides, and his/her level of income.

The analysis of the relationship between the level of education and civic attitudes revealed that people at higher levels of education have more positive civic attitudes.

Meanwhile, the analysis of the relationship between the level of education and trust in public institutinons revealed that people with a higher level of education seem to have more trust in institutions. The analysis also showed that older people have less trust in institutions than younger people.

The analysis of the relationship between health status and education level showed that people at higher levels of education had a higher self-rated health. This finding supports the hypothesis that education helps people make more informed decisions about their health.

[27] Caucasus Barometer 2019 annual household survey dataset has been used in the analysis.

SUMMARY OF KEY FINDINGS

This section presents ESA findings based on the analysis of the Armenian education sector, organized by chapter, while the next section presents policy recommendations.

ANALYSIS OF SOCIO-DEMOGRAPHIC, HUMANITARIAN AND EMERGENCY CONTEXTS, AS WELL AS RESPECTIVE PAST TRENDS AND FUTURE PROSPECTS AFFECTING THE SCHOOL (PRESCHOOL) EDUCATION SECTOR

1. Population decline, given the current trends, will continue and will be accompanied by changes in the spatial and age distribution of the population.

In the marzes, by 2030, the population of preschool, primary, and lower-secondary age will decrease, while the population of upper-secondary age will increase.

In Yerevan, the population of lower and upper secondary age will increase by one-tenth and onethird respectively, significantly driven by internal migration from rural and other urban areas. This sharp increase in the upper secondary age population will greatly strain the available resources (given that school resources in Yerevan are already strained) as disproportionally more schools in Yerevan operate in two or three shifts than in the marzes.

2. Poverty, which had been declining steadily before the COVID-19 pandemic, has risen again due to the economic downturn caused first by the pandemic, then by the conflict in and around Nagorno-Karabakh, and then by the ramifications of the war in Ukraine.

Child poverty remains a grave concern, as a third of children in Armenia are poor, with child poverty rates among the highest of any age group. Among extremely poor out-of-school children, every fifth child did not attend school because of a need to work or due to lack of monetary means.

3. HIV, AIDS, and malaria are not serious public health concerns in Armenia, and among children, in particular. However, there has recently been a worrying growth in HIV cases among children.

Respiratory diseases continue to be a significant disruptor in the educational process, especially in preschool and primary education. In 2018-2020, the incidence of respiratory diseases among children 0-14 years old was about three times as high as among adults and adolescents.

According to official statistics, every tenth child under the age of 3 is not vaccinated. The vaccination rates are lower in cities than in rural areas. DHS data indicates that vaccination coverage may be lower than what is officially reported, and children are more likely to be vaccinated if their mothers have a secondary (rather than basic or tertiary) education. Overall, vaccine hesitancy is becoming an increasingly serious problem in Armenia.

4. Child malnutrition continues to be a major problem, as every fifth household in Armenia suffers from food shortages. There are also growing nutritional problems among children, especially related to overweight. Since malnutrition, affecting the mental development of children, increases the risk of morbidity and directly affects the educational process, the school meal program implemented in Armenia since 2012 has the potential to have a high return in terms of improved health and learning outcomes.

5. The number of registered cases of childhood disabilities is on the rise, and the actual number may be even higher due to underreporting, lack of proper identification, and related issues. The introduction of universal inclusive education is a significant achievement. However, therapeutic, pedagogical, and psychological support is not always adequately available, and school (preschool) infrastructure is not always properly adapted to the needs of children with disabilities.

6. More than half the schools in Armenia are exposed to high seismic risk. Most school buildings were constructed before the Spitak earthquake, and the design of the structures does not conform to modern requirements of earthquake resistance.

7. The average risk from secondary hazards is low, but 70 schools are within a radius

of 50 km from the Metsamor nuclear power plant, mainly in Yerevan and Armavir.

8. The COVID-19 pandemic has revealed the unpreparedness of the education system for distance learning - from access to the Internet and computers to availability of online educational content, the regulatory framework, and specialists who develop and deliver digital learning and teaching. In terms of content, the launch of the e-school Armenia online platform is a significant positive development, although much remains to be done to ensure high-quality content.

ANALYSIS OF PUBLIC EXPENDITURE ON SCHOOL (PRESCHOOL) EDUCATION, MACRO-ECONOMIC AND PUBLIC FINANCE CONTEXT AFFECTING THE EDUCATION SECTOR

9. Armenia has shown moderate economic performance over the past decade, as real GDP growth for the 2010-2021 period averaged 3.6% per year. Meanwhile, for 2022-2024, the WB projects an average annual growth of 4.3%. Overall, long-standing structural problems are restraining the Armenian economy from reaching its full potential.

10. General government revenues increased significantly between 2010 and 2020, with a compound annual growth rate of 7.2%.

In 2010-2020, the general government budget deficit averaged 3.2% of the GDP, while the share of capital spending in total spending fell by one-third. In parallel, government interest payments increased by 5.4 times, averaging an 18.5% growth per year.

11. Armenia is one of the worst performers among peer and benchmark countries when it comes to public spending on education. Armenia lags both in terms of the share of government spending in GDP and in spending per capita or per student at any level of education.

In 2010-2020, general government spending on education accounted for 2.7% of the GDP. Meanwhile, the national financial effort for education, which reflects the priority given by the government to education within the expenditure over which it has control, was on a downward track.

The rate of growth in spending on education barely offsets the increase in prices. Between 2016 and 2021, real spending on primary and upper secondary education grew at a meager annual rate of 0.3% and 0.6%, respectively, while real spending on lower secondary education decreased by 1.7%, year on year. With such sluggish growth rates, it is unlikely that significant progress can be made.

12. In 2016-2021, general government expenditure per student in pre-primary education increased by a compound rate of 2.5%, while in primary and secondary education it decreased by a compound rate of 2.8%.

13. A teaching career in Armenia is not financially attractive, therefore attracting talent to school teaching positions is problematic. Currently, teachers' average net wage is only 84% above the national poverty line. The average annual salary of teachers is only 58% of the GDP per capita (the same indicator is 168% in Latvia, 182% in Slovenia, 197% in Poland, 361% in Turkey).

Overall, teachers are among the lowest paid workers, as their average salary is only 55% of the average salary in Armenia.

The Government recently adopted a program whereby teachers' salaries will equal and even exceed the current average salary, but this increase will affect only those who pass the voluntary attestation. So far, the attestation program is moving relatively slowly.

In 2023, in order to equalize the average salary of *all* teachers with the average salary in Armenia, the Government needs to allocate an amount equal to approximately 1.7% of state budget revenues.

14. The share of teaching staff compensation in school budgets is high compared to peer and benchmark countries, but the absolute amount of compensation is low, as public expenditures on education are among the lowest. At the same time, the share of current expenditures other than staff compensation is one of the lowest, which may entail an inadequate supply of educational materials and modern equipment.

ANALYSIS OF POLITICO-INSTITUTIONAL MACRO-LEVEL CONTEXT AFFECTING POLICYMAKING IN THE EDUCATION SECTOR

15. The merger of the Ministry of Education

and Science, the Ministry of Culture, and the Ministry of Youth Affairs and Sports has significantly reduced interdepartmental bureaucracy. However, there are still some gaps in the governance of the education sector. For instance, even though the coordination of general and extracurricular education was integrated, the latter still faces issues in terms of solid and comprehensive management. Five extra-curricular institutions operate under the supervision of the Department for General Education. A number of extra-curricular sports facilities are administered by the Department for Sports Policy, and others by the Department for Cultural Heritage and Folk Arts. Meanwhile, most extra-curricular institutions are run by communities.

16. The distribution of functions between the MoESCS and regional/community administrations is not entirely clear, as there are some functional overlaps, especially in the context of community consolidation.

17. The Department for General Education of the MoESCS faces issues with the development of institutional and professional capacities in the evaluation of trainings, educational technologies, textbooks, etc. Building these capacities will allow the Ministry to improve the efficiency of coordination of agencies providing services to it.

18. The MoESCS and the agencies providing services to the MoESCS need capacity building, especially in monitoring, analysis, and evaluation.

19. The statutes of the departments of the MoESCS, regional department of education and agencies providing services to the MoESCS contain duplicate provisions. Some functions are controversial (e.g., the Division of Mass Sports and Physical Education coordinates the development of standards for the subject "Physical Education"); do not define an implementing unit (e.g., the involvement of NCEDI in issues related to the Bologna Process); and are repetitive (e.g., both NCEDI and ATC perform assessment functions).

20. The Education Management Information System collects large amounts of information from schools; however, schools do not get any feedback from the MoESCS.

21. Internal evaluation of schools is conducted inefficiently, while external evaluation by an independent evaluator is not carried out at all, though this is a legal requirement.

22. The effectiveness of school boards, as well as of parent and student councils, operating under the auspices of the MoESCS, is low.

ANALYSIS OF SCHOOL (PRESCHOOL) ENROLLMENT, SCHOOL (PRESCHOOL) COVERAGE, AND INTERNAL EFFICIENCY WITH A FOCUS ON SOCIAL EQUITY

23. In pre-pandemic 2019, the net enrollment rate for children aged 0-2 years was 5.0% and the gross enrollment ratio for children aged 3-5 was 61.6%.

In recent years, the government has opened dozens of elementary schools for children aged 5-6 to prepare them for primary school. This is a temporary solution, which gives children at least some preschool education. The best solution would be the opening of proper kindergartens, giving children a full-fledged preschool education.

The government plans to invest heavily in the construction and renovation of kindergartens and increase the enrollment for children aged 3-5 to at least 85% by 2026.

24. Over the past decade, enrollment ratios have deteriorated at all levels of school education.

In primary education (grades 1-4), the net enrollment rate was 90.1% in 2020 against 94.2% in 2011.

In lower secondary education (grades 5-9), the net enrollment rate was 89.2%, down 9.4 percentage points compared to 2011.

In upper secondary education (grades 10-12), the gross enrollment ratio was 57.9% in 2020, down 21.4 percentage points from 2011.

25. The repetition and dropout rates in Armenia are extremely low.

26. Approximately one in ten ninth-graders does not continue their education, even though a 12-year education is compulsory in Armenia since 2017.

In 2020, 6.9% of nine-year-old children (4th grade) and 13.2% of fourteen-year-old children (9th grade) were not enrolled in any grade of secondary school (out of the permanent pop-

ulation).

According to UNESCO statistics, in 2019-2020, about 44.500 children were out-of-school.

27. There is a significant gender gap in high school enrollment, as the gross enrollment ratio for girls is 63.5%, while for boys it is 10 percentage points lower.

28. In 2020, the gross intake ratio to the last grade of primary and lower secondary education was 93.2% and 90.1%, respectively. For the 2012 cohort who reached 9th grade in 2020, the ratio of 9th graders to 1st graders was 92%.

29. In 2010-2020, 48 state general education institutions were closed.

In 2020, the school supply was the lowest in the urban settlements of the marzes (84.7%), accordingly, the load there was the highest (106.3%).

In the rural settlements, the school supply in 2020 was twice the demand – 202.5%, while the load was just 39.2%. However, out of 954 rural settlements in Armenia in 2020, no school existed in 141 settlements.

In Yerevan, school supply was 111.0% in 2020, while school load was 73.6%.

30. The pupil-to-teacher ratio in the state general education institutions of Armenia was 12.7 in 2019. Compared to 2010, this ratio has increased both in Yerevan and in all marzes.

Compared to the benchmark countries, the pupil-to-teacher ratio in Armenia was the lowest in upper secondary education but was one of the highest in primary and lower secondary education.

31. Armenia has a significant number of tiny schools. In 2020, 6.3% of schools had 20 or fewer pupils. In these schools, only 0.3% of pupils were enrolled.

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32. Key economic indicators characterizing the labor resources in Armenia, such as participation rate, employment rate, and unemployment rate, have been steady over the past few years. There is a wide gender gap in working hours, with men on average working more hours per week than women.

33. A higher level of education appears to be economically beneficial. The return on investment in education is significantly higher at the tertiary level of education. Middle vocational education does not appear to provide much return on investment (measured by wages) compared to basic secondary education alone. However, people with vocational education are more likely to be employed than those with only basic primary or secondary education.

34. There is a mismatch between supply and demand of potential labor force, as measured by the number of recent graduates of higher educational institutions. In 2020, the number of available vacancies was about 9,100, while the number of recent graduates was about 13,800. The mismatch between supply and demand is especially significant in the service sector, despite the steady increase in employment in this sector. The mismatch is also more significant for women than for men in terms of working in jobs for which they are over-qualified. This, in its turn, impacts the gender wage gap.

35. A below-replacement fertility rate poses a significant challenge, as Armenia faces the prospect of a declining population, which may be associated with a deterioration in long-term economic growth prospects.

36. The factors that characterize people's civic engagement are related to their support of the community and government. Overall, compared to people without education, those with an education appear to show greater civic engagement; however, this is not the case with the trust in public institutions. A significant factor in the specified model on trust is the age of people, with younger generations having more trust in various institutions.

37. Compared with people without primary education, those with a higher level of education had a higher self-rated health status. This finding supports the assumption that the more educated people are, the more informed choices they make about their health, improving their overall wellbeing.

POLICY RECOMMENDATIONS

1. Given the forecasted increase in the population of upper secondary age in Yerevan, the government should step up the expansion of high schools in Yerevan.

The government should optimize the use of school buildings in rural areas (given their already significant underload, which is forecasted to increase in the next decade), considering their shared use also as preschool, out-of-school, and community centers.

2. The government should fine tune its social assistance policy so that no child in Armenia refrains from attending school for financial reasons.

3. The government should implement a long-term public information and education strategy to raise the awareness of both children and parents about healthy lifestyles, with particular attention paid to vaccination, hygiene, smoking, exercise, etc.

The government should address the widespread problem of respiratory diseases among preschool and primary school students by taking appropriate measures (class size, classroom ventilation, hygiene, relevant knowledge among children and parents, better primary health care services, etc.) to mitigate the problem.

Expanding preschool enrollment and investing in preschool and school meal programs is one of the most effective ways to alleviate child malnutrition.

4. The government needs to enforce infrastructure standards, as the problem of physical accessibility to general education schools for children with disabilities remains unresolved in Armenia. In some cases, the adjustment of school infrastructure is limited to the construction of ramps. Moreover, even those adjustments are not always made in accordance with the needs of children with disabilities. For example, ramps have been built in many schools, but, in some cases, they are practically useless for children with disabilities due to the inappropriate slope.

5. The government should further prioritize the improvement of seismic resistance and the construction of modern school and preschool buildings, given the high seismic risk and the urgent need for earthquake-resistant structures.

For these purposes, a predetermined share of the state budget expenditures should be allocated annually.

6. The government should devise evacuating procedures and appropriately communicate it with stakeholders. Also sheltering facilities should be constructed/upgraded to reduce any possible exposure to radiation.

These facilities can also be used as bomb shelters, an issue that is not always properly addressed, despite apparent risks.

7. The government should invest in community centers, especially in rural areas, to provide access to the Internet and computers to economically disadvantaged children.

The government should invest heavily in computers for schools, as most of the existing computers are either out of order or legacy PCs.

8. The government should dramatically increase spending on education and target achieving the level of peer countries in the mid-term perspective. Particular attention should be paid to the very significant increase in teachers' salaries.

9. The government needs to pay due attention to the supply of educational materials, as teachers may be present in classrooms, but they may lack the educational materials necessary for effective teaching.

10. The government should set a goal to achieve 100% enrollment in pre-primary education, given the huge importance of preschool education for child development.

11. Additional research is needed to identify the reasons behind some basic school graduates choosing not to continue their education. This is a significant loss to the workforce and possibly additional direct costs to society due to the high risk of delinquency.

The government should improve the system for identifying out-of-school children/children at risk of dropping out and take effective measures to send those children to school.

12. The government should address the relatively low enrollment of boys in high schools by policy interventions that both increase the demand for education and improve the supply of education services. Low enrollment in high-schools is a serious problem for society, as the chances of continuing education without attending high school are low.

13. The distribution of functions between the MoESCS and regional/community administrations should be reviewed and clarified, especially in the context of community consolidation.

The statutes of the departments of the MoESCS and agencies providing services to the MoESCS should be revised to avoid duplications and distribute functions more consistently.

14. The government needs to address the capacity building of consolidated communities to transfer part of the authority to manage educational institutions.

15. The capacities of the mid-level management of the MoESCS in coordinating the activities of agencies providing services to the MoESCS need to be further developed. This would reduce the workload of the top-level management of the MoESCS and make the management process more institutionalized and participatory.

16. Cooperation between agencies providing services to the MoESCS should be further expanded. Mergers of some agencies to avoid duplication of functions should be considered.

17. The monitoring, analysis, and evaluation capabilities of the Department for General Education of the MoESCS and agencies providing services to the MoESCS need to be further developed.

18. The MoESCS should regularly evaluate the provision of outsourced services and programs implemented by various organizations, to assess the effectiveness and ensure the institutionalization of successful outcomes.

19. External evaluation of schools should be regularly conducted. An effective system of school accountability should be introduced.

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ANNEX 1.1

DESCRIPTION OF THE DEMOGRAPHIC FORECASTING MODEL

The forecasting model of the demographic situation is based on the data published by the RA Statistical Committee. In particular, the data of the 2011 census as of January 1 of the reporting year. Considering the rest of the data used in the report are presented as of the end of the year, in the model, the indicator of population number as of January 1 of the corresponding year has been changed to December 31 of the reporting year.

The forecast year starts with 2021 and ends with 2030. The forecasting model's calculation is based on the average indicators of population change between 2012 and 2019. The year 2011 was not taken into account, because, due to the census, there was a significant revision of the data, and 2020 was not included because the change in the population due to the closure of the borders imposed by the epidemic is not descriptive. The calculation was carried out taking into account the population change from 2012 to 2019 in each age group. In particular, the population of each age group was transferred to the next age group of the following year, while at the same time including the above-mentioned change.

The indicators considered during the model development are the natural growth: births and deaths, and the migration balance: arriving and departing population.

Core shocks considered in the model are the escalation of the conflict in and around Nagorno-Karabakh in 2020, as a factor that decreased the number of the active age male population, as a factor of potential increase in population, and the COVID-19 pandemic, as a factor that affected the whole population.

The forecast was made for the whole country, for Yerevan, for urban settlements, except Yerevan, for rural settlements, as well as by gender disaggregation.

ANNEX 1.2

№	NAME	MARZ	LOCATION	DISTANCE FROM NUCLEAR POWER PLANT, KM
1	Shahumyan secondary school	Armavir	Shahumyan	21,1
2	Arshaluys secondary school after S.Grigory-an	Armavir	Arshaluys vil-lage	8,4
3	Nor Yedesia Secondary School after Saint NersesShnorhali	Aragatsotn	Nor Edesia	33,0
4	Basic school №10	Armavir		12,0
5	Basic School No.6	Armavir		13,0
6	High School No.1	Armavir		14,0
7	Norapat Secondary School	Armavir		15,0
8	School No. 2 after M. Maghakyan	Armavir	Mrgashat	17,4
9	Lusagyugh Secondary School	Armavir	Lusagyugh	25,0
10	School No.11 after VahanRshtuni	Armavir	Vagharshapat	16,7
11	Basic School No.9	Armavir	Vagharshapat	18,3
12	Basic School No.7	Armavir	Vagharshapat	17,6
13	Griboyedov Secondary School	Armavir		20,0
14	Secondary School after MekhakMekhakyan	Aragatsotn	Aragats	25,2
15	ZoravarAndranikOzanyan Basic School No.5	Armavir		13,8
16	High School No.83	Yerevan		38,5
17	Stepan Shahumyan Basic School No.1	Yerevan		38,2
18	Nersisyan Basic School No.6	Armavir	Vagharshapat	16,1
19	Theodore Rshtuni School No.11	Armavir	Vagharshapat	16,7
20	Basic School No.52	Yerevan		40,6
21	School No.10 after MovsesKhorenatsi	Armavir	Vagharshapat	20,9
22	MesropMashtots Basic School No.1	Armavir	Vagharshapat	16,9
23	Haykavan Secondary School	Armavir	Haykavan	20,7
24	Eurnekian School, Araratyan Street, Vagharshapat, Armenia	Armavir	Vagharshapat	17,9
25	GrigorNarekatsi Basic School No.137	Yerevan		35,2
26	High School No.5	Armavir	Vagharshapat	18,4
27	Kindergarten No.84	Yerevan		35,8
28	Voskehat Secondary School	Aragatsotn	Voskehat	25,3

29	Pshatavan Secondary School	Armavir	Pshatavan	29,5
30	Secondary school named after T. Khachatry-an	Armavir	Jrarat	23,2
31	Kakavadzor Secondary School	Aragatsotn	Kakvadzor	57,6
32	Kosh Secondary School	Aragatsotn	Kosh	44,8
33	Ujan Kindergarten	Aragatsotn	Ujan	39,5
34	Daniel Varuzhan Basic School No.89	Yerevan		47,5
35	Basic School No.132	Yerevan		40,4
36	Kindergarten No.88	Yerevan		34,1
37	Basic school No. 90 after VahanZatikyan	Yerevan		34,9
38	Basic School No.179	Yerevan		32,4
39	Siamanto Basic School No.162	Yerevan		31,9
40	High School No.105	Yerevan		36,1
41	Kindergarten No.28	Yerevan		41,5
42	Kindergarten No.36	Yerevan		38,6
43	Kindergarten No.44	Yerevan		36,7
44	Kindergarten No.41	Yerevan		38,6
45	Kindergarten No.38	Yerevan		37,8
46	Kindergarten No.84	Yerevan		35,8
47	Kindergarten No.3	Armavir	Metsamor	6,4
48	Kindergarten No.4	Armavir	Metsamor	6,6
49	Kindergarten No.1	Armavir		14,0
50	Kindergarten No.8	Armavir		14,4
51	Kindergarten No.10	Armavir		13,7
52	Kindergarten No.2	Armavir		13,8
53	Kindergarten No.11	Armavir		15,6
54	Arevik Kindergarten No.6,	Armavir	Vagharshapat	18,2
55	Kindergarten No.139	Yerevan		35,1
56	Hasmik KinderGarden, 80 NersesAshtaraket-si St	Aragatsotn	Ashtarak	33,0
57	Kindergarten, Vagharshapat	Armavir	Vagharshapat	21,1
58	Tsitsernak Kindergarten No.13	Armavir	Vagharshapat	17,1
59	Dzntsaghik Kindergarten No.14	Armavir	Vagharshapat	18,5
60	Vostan Kindergarten No.16	Armavir	Vagharshapat	20,6
61	Kindergarten, GrigorGhapantsyan St	Aragatsotn	Ashtarak	32,6
62	Arax Muradyan Kindergarten	Aragatsotn	Ashtarak	32,9
63	Arevik Kindergarten	Aragatsotn	Ashtarak	30,9
64	Hovik Kindergarten	Aragatsotn	Ashtarak	30,3

65	Kindergarten No.80	Yerevan		32,6
66	Mkhitar Sebastatsi Educational Complex	Yerevan		34,0
67	Mkhitar Sebastatsi Educational Centre	Armavir	Parakar	30,5
68	Kindergarten No.144	Yerevan		36,0
69	Kindergarten No.27	Yerevan		40,3
70	Kindergarten No.77	Yerevan		33,7

ANNEX 1.3

METHODOLOGY USED FOR THE ASSESSMENT OF THE SOCIAL IMPACT OF EDUCATION

The analysis aimed to assess the effects of education on trust, civic attitudes, and self-rated health. Data from the 2019 Caucasus Barometer Annual Household Survey and the following methodology were used for the assessment:

- An exploratory factor analysis was conducted to identify the primary factors that explain trust in public institutions, as well as civic attitudes.
- A regression analysis was conducted to explain trust in public institutions, as well as civic attitudes and self-rated health, depending on the level of educational attainment of a person, controlling for age, type of settlement and income level.

The first factor analysis using variables of trust identified four groups of factors (Table 1.31):

- trust in the government;
- trust in international organizations and the human rights defender;
- trust in institutions providing services, such as the education system, healthcare system, police, political parties, media, courts, and banks;
- trust in the national army and religious institutions.

These factors were then aggregated into a single variable of trust, which was used in the regression analysis.

The second factor analysis using variables of civic attitudes identified two groups of factors (Table 1.32):

- attitude towards community support, participation in elections, and the protection of traditions;
- attitude towards supporting the government and observing laws.

Again, these factors were then aggregated into a single variable of civic attitude, which was used in the regression analysis.

An ordinary least squares regression was conducted using civic attitudes (Model 1), trust in institutions (Model 2), and self-rated health (Model 3) as dependent variable. All three models were statistically significant (Table 1.3-3).

Model (1) describes the relationship between the level of education and civic attitudes. The base variable is “not having completed primary education”. According to the estimation results, at each level of education, the attitude of people towards civic participation has a higher value compared to people with no primary education.

It is significant that those with secondary technical and higher education are more likely to engage in various civic activities than those with a secondary or lower level of education.

Model (2) describes the relationship between the level of education and trust in public institutions. Education levels are not statistically significant in the model, however, compared to people with no primary education, those with secondary or higher levels of education appear to have more

trust in institutions. The specified model shows that age has a statistically significant inverse relationship with people's trust in institutions, with older people trusting institutions less than younger people.

Model (3) describes the relationship between health status and educational level, keeping other demographic characteristics constant. Compared with people without primary education, those with a higher level of education had by 0.7 to 0.9 points higher score of self-rated health. This finding supports the hypothesis that education helps people make more informed decisions about their health.

TABLE 1.3-1 FACTOR ANALYSIS OF PEOPLE'S TRUST IN PUBLIC INSTITUTIONS

People's Trust Towards	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
Executive Government	0.699	0.089	0.079	0.120	0.482
President	0.608	0.143	0.021	0.072	0.602
Parliament	0.575	0.151	0.284	-0.024	0.560
Local Government	0.556	0.149	0.251	0.054	0.599
United Nations	0.118	0.656	0.071	0.053	0.546
European Union	0.117	0.642	0.073	0.015	0.567
NGOs	0.108	0.542	0.155	-0.125	0.647
Ombudsman	0.188	0.496	0.109	0.157	0.674
Healthcare System	0.265	0.084	0.423	0.111	0.725
Education System	0.300	0.147	0.414	0.175	0.674
Courts	0.132	0.359	0.411	0.089	0.671
Media	0.304	0.144	0.409	0.076	0.707
Police	0.340	0.133	0.386	0.296	0.624
Political Parties	0.312	0.312	0.352	-0.146	0.648
Banks	0.105	0.262	0.335	0.004	0.808
Army	0.176	0.016	0.096	0.448	0.759
Religious Institutions	0.189	0.022	0.132	0.396	0.789

Source: ESA calculations

TABLE 1.3-2 FACTOR ANALYSIS OF CIVIC ATTITUDES

CIVIC ATTITUDES	FACTOR 1	FACTOR 2	UNIQUENESS
Support people in need	0.657	0.211	0.522
Voluntary community work	0.603	0.203	0.576
Protect traditions	0.529	0.167	0.687
Vote in elections	0.477	0.398	0.614
Observing laws	0.286	0.429	0.734
Support the government	0.369	0.419	0.673

Source: ESA calculations

TABLE 1.3-3 RESULTS OF THE REGRESSION ANALYSIS

VARIABLES	civiC Attitudes	Trust in Institutions	Health
EDUCATION (COMPARED TO LESS THAN PRIMARY EDUCATION)			
Primary education	3.126***	-0.048	0.960**
	(0.780)	(0.378)	(0.389)
Incomplete secondary education	2.827***	0.241	0.663*
	(0.709)	(0.343)	(0.354)
Complete secondary education	2.897***	0.387	0.707**
	(0.697)	(0.337)	(0.348)
Secondary technical education	3.293***	0.472	0.727**
	(0.698)	(0.338)	(0.348)
Incomplete higher education	2.503***	0.269	0.821**
	(0.728)	(0.352)	(0.363)
Complete higher education	3.145***	0.455	0.926***
	(0.698)	(0.338)	(0.348)
Post-graduate education	3.051***	0.269	0.599
	(0.808)	(0.391)	(0.403)
AGE			
Age	0.00171	-0.0071***	-0.022***
	(0.0023)	(0.0011)	(0.0012)
TYPE OF SETTLEMENT (COMPARED TO YEREVAN)			
Other urban	-0.426***	0.137***	-0.119**
	(0.100)	(0.049)	(0.049)
Rural	-0.392***	0.068	-0.125**
	(0.102)	(0.049)	(0.051)
PERSONAL INCOME			
Personal income	0.034**	0.013*	-0.029***
	(0.016)	(0.008)	(0.008)
CONSTANT			
Constant	4.278***	2.801***	3.756***
	(0.711)	(0.344)	(0.355)
OBSERVATIONS	**1.491**	**1.491**	**1.491**
R-SQUARED	**0.051**	**0.048**	**0.238**
PROB > F	**0.000**	**0.000**	**0.000**
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1			

Source: ESA calculations

ANNEX 2.1

TABLE 1 NEW CASES OF AIDS INFECTION BY THE MARZES, 2010-2020

REGION	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Yerevan	42	35	45	39	45	42	38	37	60	47	46
Aragatsotn	1	6	7	3	7	12	10	8	9	9	7
Ararat	4	8	10	11	11	17	18	16	16	23	17
Armavir	7	6	11	13	14	14	21	13	18	16	13
Gegharkunik	2	4	5	7	14	10	12	10	22	9	9
Lori	8	5	16	17	11	16	19	17	15	17	20
Kotayk	12	7	11	9	19	13	9	14	26	11	8
Shirak	11	5	12	19	26	23	18	8	28	23	12
Syunik	5	7	8	13	17	8	11	16	11	7	9
Vayots Dzor	-	1	5	4	4	1	4	2	3	6	4
Tavush	2	3	3	8	4	5	6	3	3	5	8
Total RA	94	87	133	143	172	161	166	144	211	173	153

Source: Armstat, 2021d

ANNEX 2.2

TABLE 1 GDP AND GDP PER CAPITA TRENDS IN ARMENIA, 2010-2020

INDICATOR	2010	2015	2018	2019	2020	CAGR** (20102020)
GDP (current B AMD)	3,460.2	5,043.6	6,017.0	6,543.3	6,181.7	6.0%
GDP (current B USD)	9.3	10.6	12.5	13.6	12.6	3.2%
Real GDP growth (annual %)	2.2	3.2	5.2	7.6	-7.4	3.4%
Population, total (M)	2.9	2.9	3.0	3.0	3.0	0.3%
GDP per capita (current 1000 AMD)	1,202.6	1,724.0	2,038.5	2,212.3	2,086.1	5.7%
GDP per capita (current USD)	3,218	3,607	4,221	4,605	4,266	2.9%
Real GDP per capita growth (annual %)	2.6	2.7	5.0	7.4	-7.6	3.1%
GDP per capita (constant 1000 2012 AMD)	1,321.1	1,610.6	1,808.9	1,942.5	1,795.4	3.1%
GDP per capita, PPP* (current USD)	7,506	9,970	13,020	14,231	13,312	5.9%

* PPP – purchasing power parity. **CAGR – compound annual growth rate

Source: WB, 2022

TABLE 2 EMPLOYMENT BY SECTOR OF ACTIVITY IN ARMENIA, EMPLOYED (IN THOUSANDS), 2010-2020

INDICATOR	2010	2015	2018	2019	2020	CAGR(2010-2020)
All sectors	1,185.2	1,072.6	1,048.5	1,077.4	1,052.4	-1.2%
Agriculture	457.4	379	272	235.9	229.6	-6.7%
Industry	120.6	120.8	237.3	149	145.7	1.9%
Services	607.1	572.9	539.2	692.4	677.1	1.1%
GDP per person employed*	25,296	30,479	37,185	38,991	39,465	4.5%

* In constant 2017 PPP USD (source: WB, 2022)

Source: Armstat, 2022

TABLE 3 EVOLUTION OF PUBLIC RESOURCES IN ARMENIA, GENERAL GOVERNMENT, 2010-2020

INDICATOR	2010	2015	2018	2019	2020	CAGR / Average
B AMD						CAGR (2010-2020)
Revenue, of which	804.3	1,201.7	1,384.5	1,614.9	1,608.7	7.2%
Taxes and duties	718.3	1,091.7	1,284.4	1,495.3	1,416.0	7.0%
Official grants	30.6	29.9	11.6	12.4	53.3	5.7%
Other revenues	55.3	80.1	88.4	107.2	139.4	9.7%
% of GDP						Average (2010-2020)
Revenue	23.2%	23.8%	23.0%	24.7%	26.0%	23.9%
Taxes and duties	20.8%	21.6%	21.3%	22.9%	22.9%	21.8%
Revenue, excl. grants	22.4%	23.2%	22.8%	24.5%	25.2%	23.3%
Official grants	0.9%	0.6%	0.2%	0.2%	0.9%	0.6%
% of total revenue						Average (2010-2020)
Taxes and duties	89.3%	90.8%	92.8%	92.6%	88.0%	91.2%
External resources*	3.8%	2.5%	0.8%	0.8%	3.3%	2.4%
Domestic resources**	96.2%	97.5%	99.2%	99.2%	96.7%	97.6%

*Official grants. **Revenue excluding official grants (taxes, duties, and other revenues)

Source: Armstat, 2022

TABLE 4 GENERAL GOVERNMENT REVENUE, EXPENDITURE, AND DEFICIT IN ARMENIA, B AMD, 2010-2020

INDICATOR	2010	2015	2018	2019	2020	CAGR (2010-2020)
Revenue	804.3	1,201.7	1,384.5	1,614.9	1,608.7	7.2%
Expenditure, of which	975.9	1,444.0	1,480.8	1,667.3	1,924.9	7.0%
Current expenditure	780.7	1,277.8	1,331.4	1,467.6	1,685.3	8.0%

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INDICATOR	2010	2015	2018	2019	2020	CAGR (2010-2020)
Interest	30.4	74.1	139.0	157.6	164.8	18.4%
Domestic	15.8	32.2	64.0	69.8	87.0	18.6%
External	14.6	41.9	75.0	87.8	77.9	18.2%
Capital expenditure	195.1	166.2	149.3	199.6	239.6	2.1%
Deficit	-171.6	-242.3	-96.3	-52.4	-316.2	6.3%
Deficit, excluding grants	-202.2	-272.2	-107.9	-64.8	-369.5	6.2%
Expenditure, excluding interest	945.4	1,369.9	1,341.7	1,509.7	1,760.1	6.4%

Source: Armstat, 2022

TABLE 5 GENERAL GOVERNMENT REVENUE, EXPENDITURE AND DEFICIT IN ARMENIA, % OF GDP, 2010-2020

INDICATOR	2010	2015	2018	2019	2020	Average share (2010-2020)
Revenue	23.2%	23.8%	23.0%	24.7%	26.0%	23.9%
Expenditure, of which	28.2%	28.6%	24.6%	25.5%	31.1%	27.1%
Current expenditure	22.6%	25.3%	22.1%	22.4%	27.3%	23.5%
Interest	0.9%	1.5%	2.3%	2.4%	2.7%	1.6%
Domestic	0.5%	0.6%	1.1%	1.1%	1.4%	0.8%
External	0.4%	0.8%	1.2%	1.3%	1.3%	0.8%
Capital expenditure	5.6%	3.3%	2.5%	3.1%	3.9%	3.6%
Deficit	-5.0%	-4.8%	-1.6%	-0.8%	-5.1%	-3.2%
Deficit excluding grants	-5.8%	-5.4%	-1.8%	-1.0%	-6.0%	-3.8%

Source: Armstat, 2022

TABLE 6 GOVERNMENT EXPENDITURE BY CATEGORY IN ARMENIA, 2010-2020

INDICATOR	2018		2019		2020		2018-2020	
	B AMD	% of total	B AMD	% of total	B AMD	% of total	CAGR	Aver. share
Public services	256.3	17.3%	291.7	17.5%	302.0	15.7%	8.5%	16.8%
Defence	238.5	16.1%	315.6	18.9%	387.9	20.1%	27.5%	18.4%
Public order, safety	123.1	8.3%	143.7	8.6%	151.4	7.9%	10.9%	8.3%
Health	79.8	5.4%	99.6	6.0%	148.6	7.7%	36.5%	6.4%
Education	149.0	10.1%	158.9	9.5%	174.5	9.1%	8.2%	9.6%
Social protection	418.7	28.3%	455.7	27.3%	548.5	28.5%	14.5%	28.0%
Other	215.5	14.6%	202.1	12.1%	212.1	11.0%	-0.8%	12.6%
Total expenditure	1,480.8	100.0%	1,667.3	100.0%	1,924.9	100.0%	14.0%	…

Source: Armstat, 2021b

TABLE 7 EXPENDITURE BY TYPE OF SPENDING AS A PERCENTAGE OF TOTAL EXPENDITURE IN PUBLIC EDUCATIONAL INSTITUTIONS, %, 2020 OR LATEST AVAILABLE YEAR

In Primary	Armenia	Czechia	Estonia	Latvia	Lithuania	Moldova	Slovakia	Slovenia
Current expenditure	86.4%	89.3%	89.6%	83.1%	92.3%	91.4%	95.2%	90.9%
All staff compensation	75.3%	58.6%	67.7%	65.4%	73.8%	74%	72.4%	73.7%
Teaching staff	51.6%	37.9%	44.0%	46.8%	52.8%	45.1%	57.8%	...
Non-teaching	23.7%	20.7%	23.7%	18.6%	21.0%	28.9%	14.6%	...
Other than staff cmpns.	11.1%	30.7%	21.9%	17.7%	18.5%	17.4%	22.8%	17.2%
Capital expenditure	13.6%	10.7%	10.4%	16.9%	7.7%	8.6%	4.8%	9.1%
In Secondary	**Armenia**	**Czechia**	**Estonia**	**Latvia**	**Lithuania**	**Moldova**	**Slovakia**	**Slovenia**
Current expenditure	89.5%	88.5%	89.8%	82.3%	93.5%	90.4%	95.6%	92.2%
All staff compensation	81.3%	52.4%	63.6%	62.8%	73.4%	72.1%	68.1%	71.9%
Teaching staff	55.7%	38.1%	41.4%	...	51.4%	48%	52.6%	...
Non-teaching	25.6%	14.3%	22.2%	...	22.0%	24.1%	15.5%	...
Other than staff cmpns.	8.2%	36.1%	26.2%	19.5%	20.1%	18.3%	27.5%	20.2%
Capital expenditure	10.5%	11.5%	10.2%	17.7%	6.5%	9.6%	4.4%	7.8%

Source: UNESCO, 2022

TABLE 8 COMMUNITY TOTAL SPENDING ON PRESCHOOL EDUCATION, 1000 AMD, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	7,561,794	7,787,867	7,596,857	8,451,485	7,351,034
Aragatsotn	489,309	531,105	588,887	664,851	608,432
Ararat	1,342,405	1,447,277	1,749,880	1,898,943	1,563,801
Armavir	1,003,265	1,154,189	1,188,780	1,374,012	307,304
Gegharkunik	725,810	756,176	924,767	1,214,273	1,448,332
Lori	951,775	1,034,811	1,216,796	1,293,843	1,212,239
Kotayk	1,373,870	1,631,411	1,768,929	2,165,104	2,377,969
Shirak	844,663	1,003,620	1,054,737	1,175,959	1,020,025
Syunik	859,246	989,118	1,184,288	1,355,103	1,534,668
Vayots Dzor	230,692	289,124	330,017	366,164	289,776
Tavush	610,254	734,185	790,252	927,637	991,646
Total RA	**15,993,082**	**17,358,883**	**18,394,189**	**20,887,374**	**18,705,227**

Source: MTAI, 2022

TABLE 9 COMMUNITY ADMINISTRATIVE SPENDING ON PRESCHOOL EDUCATION, 1000 AMD, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	7,503,743	7,582,447	7,486,101	8,379,325	7,274,668
Aragatsotn	463,459	511,161	564,128	657,334	506,353
Ararat	1,320,969	1,425,365	1,641,699	1,770,670	1,500,836
Armavir	929,280	1,120,016	1,159,987	1,273,691	236,466
Gegharkunik	680,243	717,903	838,935	1,008,980	799,374
Lori	915,397	980,439	1,208,098	1,269,280	1,171,318
Kotayk	1,295,701	1,609,105	1,712,652	1,868,866	1,623,793
Shirak	830,701	965,752	1,052,030	1,114,178	971,517
Syunik	850,592	935,493	1,082,460	1,202,351	1,115,441
Vayots Dzor	229,181	276,583	315,689	301,975	259,615
Tavush	601,212	731,072	785,836	859,133	884,104
Total RA	15,620,478	16,855,337	17,847,615	19,705,782	16,343,483

Source: MTAI, 2022

TABLE 10 COMMUNITY CAPITAL SPENDING ON PRESCHOOL EDUCATION, 1000 AMD, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	58,051	205,420	110,756	72,160	76,367
Aragatsotn	25,850	19,944	24,758	7,517	102,079
Ararat	21,436	21,912	108,182	128,273	62,965
Armavir	73,985	34,173	28,793	100,322	70,839
Gegharkunik	45,567	38,272	85,832	205,293	648,958
Lori	36,378	54,372	8,698	24,563	40,922
Kotayk	78,168	22,306	56,277	296,238	754,177
Shirak	13,962	37,868	2,708	61,781	48,507
Syunik	8,654	53,625	101,827	152,752	419,227
Vayots Dzor	1,511	12,541	14,328	64,190	30,162
Tavush	9,042	3,113	4,416	68,504	107,542
Total RA	372,604	503,546	546,575	1,181,592	2,361,744

Source: MTAI, 2022

TABLE 11 SHARE OF COMMUNITY PRESCHOOL EDUCATION SPENDING IN COMMUNITY EDUCATION SPENDING, %, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	27.7%	28.0%	27.6%	30.1%	24.0%
Aragatsotn	70.0%	70.7%	71.8%	72.2%	68.6%
Ararat	65.0%	66.5%	69.9%	71.9%	66.5%
Armavir	70.6%	72.8%	73.0%	74.4%	71.9%
Gegharkunik	58.5%	58.3%	62.2%	66.8%	69.0%
Lori	50.8%	53.7%	56.7%	58.8%	52.5%
Kotayk	62.8%	65.2%	66.1%	68.7%	67.3%
Shirak	72.6%	76.1%	75.4%	75.8%	71.3%
Syunik	60.3%	63.5%	66.4%	67.1%	68.3%
Vayots Dzor	67.4%	66.7%	68.9%	72.0%	66.4%
Tavush	66.1%	67.4%	68.8%	69.1%	69.2%
Total RA	39.3%	40.9%	42.2%	45.3%	39.2%

Source: MTAI, 2022

TABLE 12 COMMUNITY PRESCHOOL EDUCATION SPENDING PER PRESCHOOL, 1000 AMD, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	49,749	48,674	47,480	52,494	45,659
Aragatsotn	17,475	17,704	19,630	20,777	23,401
Ararat	17,210	18,091	22,434	23,444	19,306
Armavir	17,915	11,777	11,542	13,086	2,899
Gegharkunik	17,281	19,389	19,676	24,781	24,139
Lori	14,421	11,009	12,945	13,619	12,760
Kotayk	26,421	30,781	33,376	40,095	44,036
Shirak	16,893	9,937	9,252	10,226	9,533
Syunik	15,623	16,765	23,686	26,571	27,405
Vayots Dzor	13,570	9,327	10,646	11,096	8,523
Tavush	10,522	11,654	12,348	14,055	14,801
Total RA	24,454	21,484	22,323	24,807	22,084

Source: MTAI, 2022, Armstat, 2021

TABLE 13 COMMUNITY PRESCHOOL EDUCATION SPENDING PER STUDENT*, 1000 AMD, 2016-2020

REGION	2016	2017	2018	2019	2020
Yerevan city	262	262	256	281	358
Aragatsotn	247	258	241	251	439
Ararat	209	223	260	274	329
Armavir	209	191	182	198	76
Gegharkunik	236	244	242	294	542
Lori	222	201	236	233	307
Kotayk	218	256	266	310	484
Shirak	204	193	193	206	287
Syunik	199	224	261	293	393
Vayots Dzor	214	224	241	272	280
Tavush	184	212	233	255	389
Total RA	**233**	**237**	**243**	**266**	**351**

* Armstat publishes the number of students in state and municipal preschool institutions combined. To adjust the number for community preschools only, it was assumed that the average number of students in public preschools was equal to the average number of students in all preschools.

For example, in 2020, the average number of students in all preschools was 63, and the number of state preschools was 10. Thus, it was assumed that the number of students in state preschools was 63*10=630. Accordingly, the number of students was adjusted to obtain the number of students only in community preschools.

Source: MTAI, 2022

ANNEX 2.3

TABLE 1 NUMBER OF PRESCHOOL INSTITUTIONS, 2010-2020

Marz	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Yerevan	198	206	207	206	214	219	219	220	220	225
Aragatsotn	15	19	20	20	23	23	28	30	30	32
Ararat	66	73	74	75	77	77	78	80	78	81
Armavir	56	55	56	58	57	59	56	98	103	105
Gegharkunik	41	41	42	42	44	42	42	39	47	49
Lori	57	59	61	66	64	66	66	94	94	95
Kotayk	50	48	52	54	54	53	52	53	53	54
Shirak	45	46	45	50	51	51	50	101	114	115
Syunik	49	50	52	52	51	53	55	59	50	51
Vayots Dzor	17	17	18	18	18	15	17	31	31	33
Tavush	45	46	56	56	60	59	58	63	64	66
Total RA	639	660	683	697	713	717	721	868	884	906

Source: Armstat, 2022

TABLE 2 ENROLLMENT RATE OF CHILDREN IN PRESCHOOL INSTITUTIONS BY THE MARZES, %, 2014-2020

REGION	2014	2015	2016	2017	2018	2019	2020
Yerevan	36.8	36.4	36.1	35.7	36.0	37.1	26.0
Aragatsotn	19.3	15.2	17.5	18.7	22.8	25.9	14.3
Ararat	27.2	27.6	28.7	29.6	31.4	32.9	23.4
Armavir	20.3	21.3	21.8	28.5	31.9	35.0	21.4
Gegharkunik	16.4	16.5	16.2	16.7	21.1	23.5	15.7
Lori	22.7	22.8	22.3	27.4	28.4	31.9	23.6
Kotayk	27.9	28.1	28.3	29.5	31.7	34.2	25.0
Shirak	21.6	20.8	19.8	25.3	27.3	29.4	19.2
Syunik	42.1	43.4	46.1	49.7	52.6	54.3	46.7
Vayots Dzor	25.3	24.8	27.9	34.4	37.5	38.0	30.8
Tavush	33.5	34.7	35.9	39.2	39.7	43.6	31.6
Total RA	28.7	28.6	28.9	30.9	32.6	34.7	24.3

Source: Armstat, 2022

TABLE 3 PUPIL-TO-TEACHER RATIO IN STATE GENERAL EDUCATION INSTITUTIONS

Marz	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Yerevan	11.3	11.3	11.3	11.5	12.1	12.3	12.6	12.7	16.2	16.6
Aragatsotn	6.3	6.4	6.3	6.2	6.2	6.1	6.1	6.1	8	8.5
Ararat	10.1	10.3	10	9.9	10.1	10.3	10.4	10.7	13.4	14.5
Armavir	9.3	9.5	9.3	9.2	9.2	9.5	9.5	9.7	12	12.8
Gegharkunik	8.5	8.9	8.5	8.3	8.3	8.4	8.3	8.4	10.4	10.6
Lori	8	8.9	8.4	8.1	8.3	8.4	8.5	8.7	10.4	10.8
Kotayk	10.1	10.6	10.4	10.6	10.9	11.3	11.5	11.8	14.4	14.7
Shirak	8	8.5	8.1	8.6	8.7	8.8	8.8	8.8	10.1	10.5
Syunik	6.7	7.1	7	7	7.1	7.4	7.7	7.8	10.1	10.1
Vayots Dzor	6.7	6.8	6.4	6.3	6.4	6.7	6.7	6.7	8.8	9.1
Tavush	8	8.2	8.1	7.8	7.9	8	8.1	8.2	11.1	10.8
Total RA	9.1	9.4	9.1	9.2	9.4	9.6	9.7	9.8	12.3	12.7

Source: Armstat, 2022

TABLE 4 PUPIL-TO-TEACHER RATIO IN NON-STATE GENERAL EDUCATION INSTITUTIONS

marz	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Yerevan	5.2	5.4	5.9	5.2	5.1	5.1	5.3	5.3	8.7	8.7
Armavir	6	5.4	5.6	6	6.1	6.1	6.9	6.9	9.7	9.1
Lori	3.9	5.8	4.7	3.7	2.8	…	…	…	…	…
Kotayk	8.5	9.1	8.4	8.9	8.7	7.1	5.4	…	…	…
Shirak	5.5	6.1	6.5	5.6	5.8	4.5	4.9	4.2	5.5	4.8
Vayots Dzor	1.4	3.7	3.3	2.1	…	…	…	…	…	…
Tavush	…	…	…	…	3.5	3.8	3.7	3.2	6.4	5.8
Total RA	5.3	5.5	5.9	5.2	5.2	5.1	5.3	5.3	8.5	8.6

Source: Armstat, 2022

ANNEX 2.4

Table 1 Composition of labor resources in Armenia, 1000 people, 2018-2020

INDICATOR	2018	2019	2020
Total Population (as of the end of the year)	2,965.3	2,959.7	2,963.3
Labor resources (15-74 years old)	2,196.4	2,201.1	2,200.0
Economically active population	1,293.8	1,318.1	1,286.7
Employed	1,048.5	1,077.4	1,052.4
Unemployed	245.4	240.8	234.4
Population outside the labor force	902.5	883	913.3

Source: Armstat, 2021c

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