SURVIVE LEARN THRIVE

Strategic Human Capital Investments toward a more Prosperous and Inclusive Armenia

1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

PREFACE

Technological advancement is changing the main drivers of economic growth in the modern world. Therefore, each country must adapt its labor force to present-day conditions. Currently, our country is facing several challenges, and to cope with them, our state must bring together and consolidate all its forces for the benefit of Armenia and the well-being of its people.

Trends in population aging in the world and in Armenia pose a critical challenge to the entire socioeconomic system. For this reason, urgent interventions are necessary to boost the productivity of the future workforce. Given Armenia's lack of natural resources and its geographic constraints, its key resource is human capital, the development of which can put the country on the right development track and enable us to keep pace with global trends.

I am pleased that Armenia hosted the World Congress on Information Technology and the Global Innovation Forum from October 6 to 9, 2019, , which signals that Armenia recognizes that realizing the full potential of our population can help to improve our position in the global economy. Armenian citizens with education and skills will be equipped to work in fields such as artificial intelligence, virtual reality, and other advanced technologies, not only at the local level but worldwide. This has also been emphasized by the recent establishment of the Ministry of High-Tech Industry with the key mission of achieving success by adopting the right policies to build skills in these areas.

I think the fact that Armenia is an early adopter of the World Bank Human Capital Project is an indication of our commitment to accelerating more and better investments in health, education, social protection, and employment that will prepare future generations to be competitive in a rapidly-changing global economy.

We recognize that making strategic investments in human capital development requires both a shift in thinking and development and an upgrade in infrastructure. The Government of Armenia will continue to invest in physical infrastructure, and, in parallel, we will also consistently expand access to quality healthcare, increase school enrollment rates, and strengthen social assistance and job-matching programs. I would like to note that, in the health and education sectors, we attach importance not only to using cutting-edge technologies and building improved facilities but also to ensuring the highest quality content. While it is important for children to study in newly renovated and equipped modern schools, which create an environment and conditions conducive to learning, we also aim to provide those children with a competitive, modern, and quality education that enables them to develop creative and analytical thinking.

To keep human capital development on the government's agenda, I have initiated the setting up of an inter-ministerial committee consisting of Deputy Ministers from the Health, Education, and Social Affairs ministries , as well as representatives of other government agencies. This steering committee will serve as a consultative platform for the implementation of reforms in human capital development.

Human capital development is a priority for us. The government's consistent policy for improving health, education, and skills in Armenia is captured in the Government Program, the associated five-year action plan, and Armenia's long-term strategic documents.

In partnership with the World Bank, we have also undertaken this assessment of human capital formation in Armenia's children and youth with the aim of identifying investments in health, education, social protection, and jobs that can catalyze the next generation into a competitive workforce. This assessment constitutes a consensus between the Government of Armenia and the World Bank on critical investments over the medium term. I thank the joint team for their close collaboration in developing recommendations to inform the human capital development strategy for Armenia.

The Velvet Revolution has offered the Armenian people a historic opportunity to strengthen governance, boost economic growth, and ensure equality of opportunity. We are committed, through the Human Capital Project, to keeping our promise to invest in the knowledge, skills, and health of the next generation, to boost growth, support vulnerable families, and ensure that Armenia is competitive in the global economy of the future.

Mher Grigoryan
Deputy Prime Minister of the Republic of Armenia

PREFACE

In 2018, the World Bank Group launched the Human Capital Project (HCP), a global effort that supports countries through data, policies, and research to accelerate more and better investments in people for greater equity and economic growth. Without strategic investments in human capital, countries will not have a workforce that is prepared for the highly-skilled jobs of the future and will not be able to effectively compete in the global economy. Human capital development is urgently needed in the South Caucasus, a region confronted with aging populations, net emigration, chronic health conditions, growing skills mismatches in the labor market, high unemployment rates among youth and women, and inequitable household income levels.

The HCP presents a viable opportunity for the World Bank to support the region in addressing these challenges and accelerating growth in a sustainable and inclusive way. Recognizing this opportunity, the Government of Armenia has prioritized human capital development, through the early adoption of the HCP and ensuring high-level political leadership of the human capital agenda by Deputy Prime Minister Mher Grigoryan. This report, Survive, learn, thrive: strategic human capital investments toward a more prosperous and inclusive Armenia, builds on the ongoing country engagement and is the first step towards collaboratively designing and implementing strategic human capital investments in the country. The report puts a spotlight on the state of human capital outcomes in Armenia, explores the challenges to building and activating human capital, and recommends specific investments to overcome these challenges.

The World Bank is committed to the ambitious human capital agenda that the Government of Armenia has adopted. Through our close collaboration, we will build on this initial stock-taking with deeper analyses to operationalize these recommendations and with financing for high-impact investments in Armenia's people. Together, we can ensure rapid progress towards an Armenia in which all children arrive in school well-nourished and ready to learn, can expect to attain real learning in the classroom, and are able to enter the job market as healthy, skilled, and productive adults.

Sebastian-A Molineus
World Bank Regional Director for the South Caucasus

ACKNOWLEDGEMENTS

The report was produced through a collaboration between the Government of Armenia and the World Bank under the supervision of Sebastian Molineus (Regional Director, South Caucasus), Mercy Miyang Tembon (Former Country Director, South Caucasus), Sylvie Bossoutrot (Country Manager, Armenia), Lire Ersado (Program Leader, Human Development), Fadia Saadah (Regional Director, Human Development), Harry Anthony Patrinos (Practice Manager, Education Global Practice), Tania Dmytraczenko (Practice Manager, Health, Nutrition, and Population Global Practice), and Cem Mete (Practice Manager, Social Protection and Jobs Global Practice).

The writing team consisted of Adanna Chukwuma, Nairuhi Jrbashyan, Marianna Koshkakaryan, and Maddalena Honorati. The team also thanks Arpine Azaryan for the excellent administrative assistance that facilitated the dialogue and completion of the report. The report was edited by Fiona Mackintosh and Anahit Harutyunyan and translated by Lilit Simonyan and Shushanik Aghababyan. Production of the report was supported by Micheline Frias and Monika Mayr. The report is a deliverable of the Advisory Services and Analytics on Accelerating Human Capital Development in the South Caucasus Countries, led by Soren Nellemann, Adanna Chukwuma, and Maddalena Honorati.

The team appreciates the engagement of partners in the development of this assessment, including the Office of the Deputy Prime Minister, the Ministry of Finance, the Ministry of Health, the Ministry of Education, Science, Culture, and Sport, the Ministry of Labor and Social Affairs and the Ministry of Territorial Administration and Infrastructure.

We acknowledge the helpful comments received from Vahan Danielyan, Anush Shahverdyan, Alexandria Valerio, Jason Allen Weaver, Francisca Ayodeji Akala, Zelalem Yilma Debebe, Haneen Ismail Sayed, Emily Weedon Chapman, Evgenij Najdov, Alan Fuchs, Dhiraj Sharma, Armineh Manookian, and Vigen Sargsyan that facilitated the finalization of the report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Human capital – the knowledge, skills, and health that people accumulate over their lives and that enable them to realize their potential as productive members of society – is an important contributor to the wealth of all nations regardless of their income status. A child born in Armenia today will be 57 percent as productive when she grows up as she could be if she received a full education and was completely healthy. This reflects the existence in Armenia of deficiencies in its schooling, student performance on harmonized tests, and the protection from non-fatal health risks that it provides beyond childhood. These gaps in human capital formation have negative implications for the economy. The 2013-2014 National Competitiveness Report of Armenia highlighted that insufficient human capital is a binding constraint to the country's growth. If Armenia ensured full education and complete health in the long run, the per capita Gross Domestic Product could be 1.75 times higher.

As an early adopter of the Human Capital Project, Armenia has committed to making catalytic investments to accelerate progress towards increasing the future productivity of Armenian children by reducing their exposure to health and education risks. In this assessment, the Government of Armenia and the World Bank have charted a path from the challenges of today to the desired human capital outcomes of tomorrow as facilitated by the implementation of these catalytic interventions. These investments, designed in accordance with the Armenian context, will fund essential interventions aimed at increasing access to and improving the quality of healthcare, education, social protection and jobs and at enabling the formation and activation of human capital.

Challenges	Critical Constraints	Catalytic Investments	Outcomes
~57% productivity relative to optimal health and education 11.1 years of schooling completed relative to expected 14 years Adjusted for learning only 7.9 years of schooling completed relative to expected 14 years Average score of 443 on harmonized tests relative to advanced attainment score of 625 Only 88% of children aged 15 years survive until age 60 Higher incidence of disability, heart disease, stroke, diabetes, and breast cancer than comparator countries	**Education** Low rural pre-school enrollment: - Undersupply of facilities - Norm financially unsustainable STEM graduates lack practical knowledge: - Didactive and pasive learning **Health** Financial barriers to health care: -Low public health spending -Non-strategic purchasing of services Hospital-centric service delivery: - Primary care quality gaps - Perverse provider incentives **Social Protection and Jobs** Gaps in access to social transfers among the poor: - Information and geographic barriers - Sub-optimal targeting High inactivity rates among women and youth: - Information asymmetry - Sub-optimal targeting	**Education** Scaling up the United Nations Children's Fund's alternative, cost-effective pre-schooling models Scaling up the "Armath" engineering laboratories program for innovative approaches to STEM learning **Health** Increasing pre-paid and pooled resources for health and alignment with value through strategic purchasing Investing in improving the performance of primary healthcare **Social Protection and Jobs** Increasing access to integrated social services through trained and motivated social case managers Expanding the supply and increasing the effectiveness of employment promotion programs including job-matching and other support	Increase in future productivity from better health and learning Increase in pre-school enrollment Increase in years of attained schooling Improved performance of students on harmonized tests Improved practical knowledge of STEM graduates Improved adult survival Reduction in chronic disease complications

There will be costs to failing to take action to build human capital

A growing chronic disease burden and an under-skilled and mismatched workforce will exacerbate growth and innovation challenges in the medium to long term in the absence of any reforms to increase the rate of human capital formation. Moving from ideation to the implementation of strategic human capital investments will require a whole-of-society approach to stakeholder collaboration, expanding fiscal space through resource mobilization and efficiency gains, a strong focus on measuring results to inform program learning and adaptation, leveraging external partnerships for technical and financial support, and deploying technologies that accelerate impact.

Thus, Armenia stands at an important crossroads. Human capital investments can address inequality of opportunity, stabilize demand during economic shocks, smooth consumption, and protect vulnerable groups during structural changes. Decisions taken today regarding investments in healthcare, learning opportunities, social protection, and labor market interventions will determine the ability of Armenian children and youths to compete in the global marketplace of tomorrow.

CHAPTER 1:

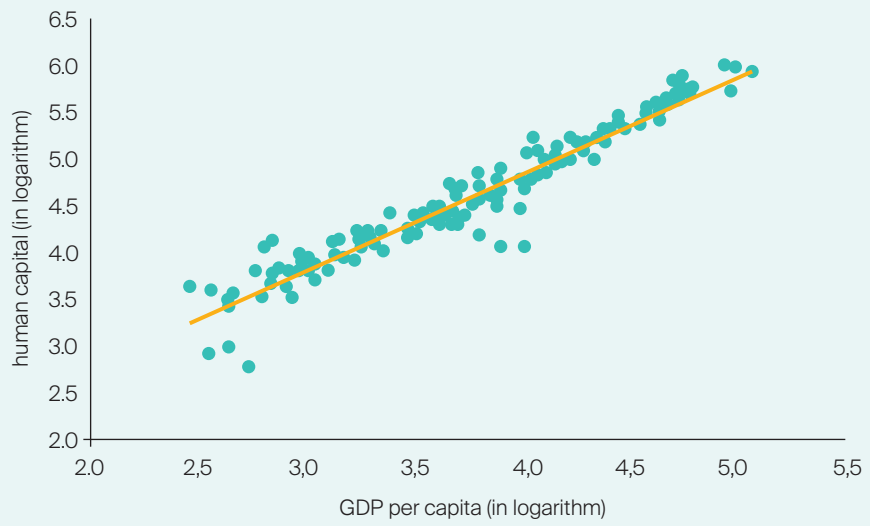
The Case for Human Capital Investments

- Knowledge
- Skills
- Health

Human capital consists of the knowledge, skills, and health that people accumulate over their lives that enable them to realize their potential as productive members of society.[1] A recent analysis by the World Bank, The Changing Wealth of Nations, showed that human capital accounts for 64 percent of global wealth – up to 70 percent of the wealth of high-income countries but only 41 percent in low-income countries (Figure 1).[2] The important contribution made by human capital to the wealth of countries at all different income levels underscores the fact that a critical mass of healthy, knowledgeable, and skilled workers can facilitate innovation, economic growth, and wealth accumulation everywhere.

Figure 1:
Human Capital and Economic Growth

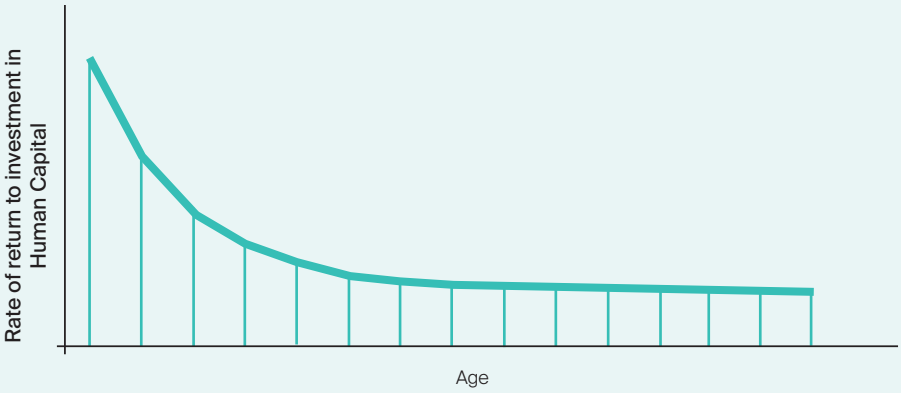
Source: *Lange, Wodon, and Carey (2018)*



The economic returns to human capital investments are highest in early childhood (Figure 2). Providing children with adequate health and nutrition enables the development of cognition, a pre-requisite for optimal learning.[3] A thriving and healthy child can gain knowledge through schooling and training that crystallizes into skills that they can use on the labor market. Meanwhile, social protection enables vulnerable individuals to access to health and education services, playing a crucial role in reducing inequalities in human capital formation. Thus, the productivity of adult workers is a function of the quantity and quality of the investments in human capital made during their infancy, childhood, and adolescent years. Also, continued investments in human capital in adulthood sustains the gains made from prior investments in the long term.

Figure 2:
The Earlier the Investment in Human Capital, the Higher the Return

Source:
James Heckman, Nobel Laurate in Economics

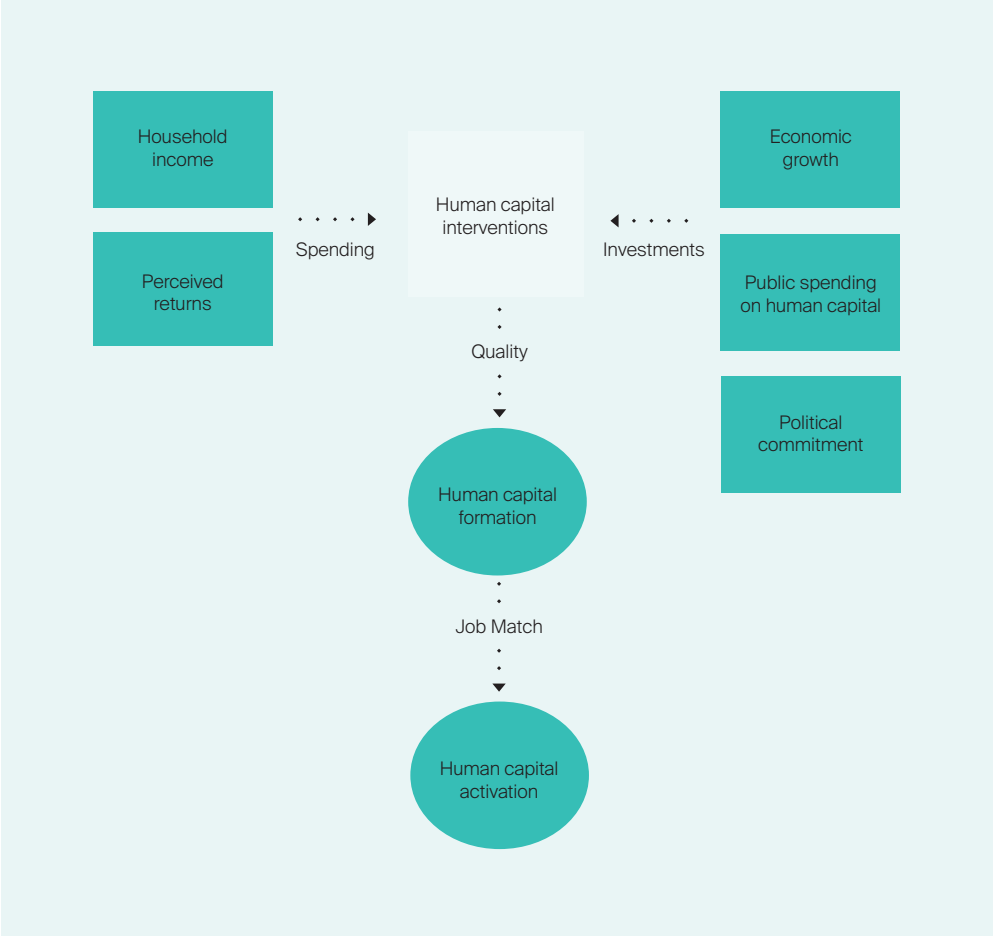


Households, through their decisions about healthcare and education spending, contribute significantly to human capital formation.[4] The amount that a household spends depends on their income and their perception of the likely returns to be gained. However, the cost of investing in health and education may exceed the means of low-income families. Furthermore, households may underestimate the returns to human capital formation. Thus, poverty and incomplete information may reduce household investments in health and education. Regardless of the cause, underinvesting in human capital contributes to intergenerational cycles of low human capital accumulation and poverty.[5] When household investments in human capital are below optimal levels, there is a clear rationale for state intervention, given the positive externalities for society that result from having a productive workforce.

How much states invest in health, education, and social protection depends on how much fiscal space they have for these investments, which will depend on the country's economic growth, public spending as a share of Gross Domestic Product (GDP), and the percentage of public expenditure allocated to human capital. These investments fund interventions in the health, education, and social protection sectors that build human capital if they are of sufficiently high quality. While investments in physical capital, such as roads and bridges, have immediate, tangible results investments in health and learning do not result in increases in economic productivity until the high-skilled recipients join the workforce and are matched with jobs in higher-productivity sectors. Therefore, political commitment to investing in human capital formation, and activation is essential to create sustainable economic growth.

This framework of human capital formation and activation – shaped by state investments, household spending, and the quality and the coverage of human capital interventions – is summarized in Figure 3.

Figure 3:
Determinants of Human Capital Formation and Activation



According to the 2013-2014 National Competitiveness Report of Armenia, insufficient human capital is a binding constraint to the country's growth.

According to the 2013-2014 National Competitiveness Report of Armenia, insufficient human capital is a binding constraint to the country's growth.[6] The macro-criticality of human capital investments in Armenia has generated a high-level political commitment to strategically investing in Armenia's children and youth. This commitment is captured in the Armenia Transformation Strategy 2050, which envisions an approach to human capital development that will enable Armenian children and youths to survive, learn, and thrive in the global economy of today and the future. In this context, this report assesses the current state of human capital formation in Armenia and explores the factors at the household level and in society at large that explain these outcomes and makes recommendations for strategic investments to build the knowledge, skills, and health of Armenia's next generation of workers to foster a stronger and more inclusive economy.

CHAPTER 2:

The State of Human Capital Formation in Armenia

Imagine the health and learning trajectory from birth to adulthood of a child born in Armenia today. Consider the risk that the child does not survive until her fifth birthday. If she does survive until school age, she may not start school or complete the full cycle of 14 years that is the norm in rich countries. If she is poorly nourished as a child and adolescent, her brain is unlikely to be sufficiently developed to support learning and creativity. Depending on the quality of her learning experience, the years that she spends in school may or may not translate into the knowledge and skills that she will need to compete in the labor market. By the time she reaches 18 years old, she may carry with her the lasting effects of her poor health and learning in childhood that will limit her physical and cognitive abilities as an adult. The Human Capital Index (HCI) has been developed to quantify this health and learning trajectory in each country and the consequences for the future productivity of a given cohort of the population.[7]

The Human Capital Project

In recognition of the urgent need for additional investments in human capital globally, the World Bank Group launched the Human Capital Project in 2018, with three major pillars:

1.
HCI: An index designed to capture the amount of human capital a child born today could expect to attain by age 18 to make the case for investment in the human capital of the next generation.

2.
Measurement and Research: Improvements in measurement and research of human capital outcomes, and in analysis to support investments in human capital formation.

3.
Country Engagement: Support Early Adopters, and ultimately all countries, to prepare national strategies that accelerate progress on human capital formation.

The HCI measures the amount of human capital that a child born today can expect to attain by the end of secondary school given the education and health risks that prevail in the country in which she was born.[8] The index is a proxy for the productivity of the next generation of workers relative to their full potential and consists of three components: survival, schooling, and health.[9] The values of the HCI range from 0 to 1, with a value of 1 implying that the future productivity of a child born today is 100 percent of what it could be with full health and a complete education.

Survival

Component 1 (Survival) answers the question: ***"Will children born today survive until school age?"*** This component reflects the unfortunate reality that not all children born today will survive until the age when the process of human capital accumulation through formal education begins. Survival in the HCI is measured using under-5 mortality rates taken from the United Nations Child Mortality Estimates.

Schooling

Component 2 (Schooling) answers the question: ***"How much school will a child complete and how much will they learn?"*** This component measures expected learning-adjusted years of schooling by combining information on the quantity and quality of education. The quantity of education is measured as the expected number of years of primary and secondary school that a child born today can expect to obtain given the prevailing pattern of enrollment and completion rates across grades. The quality of education is based on the performance of students in major international student achievement testing programs.

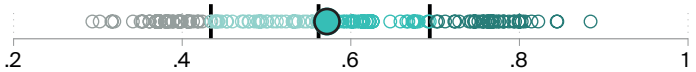
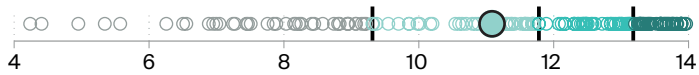
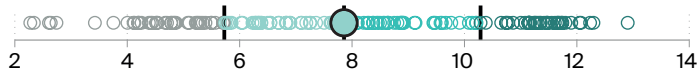
Health

Component 3 (Health) answers the question: ***"Will children leave school in good health and be able to thrive as adults?"*** Health is measured by two proxies. Adult survival rates measure the fraction of 15-year-olds that survives until the age of 60, capturing the range of fatal and non-fatal health outcomes that a child born today would experience as an adult if current conditions continue into the future. The rate of stunting in children under the age of 5 reflects the prenatal, infant, and early childhood health environment and summarizes the risks to good health that children born today are likely to experience in their early years – with important consequences for their health and well-being in adulthood.

What does the Human Capital Index tell us about the state of human capital formation in Armenia?

In Table 1 below, we describe Armenia's performance on the HCI and its components. There are gaps in human capital formation overall – a child born in Armenia today will be 57 percent as productive when she grows up as she would be if she had full health and a complete education. These gaps are predominantly driven by underperformance on learning outcomes. Children complete 11.1 out of 14 total years of schooling and score 443 on average in harmonized test scores relative to a benchmark of 625 for advanced attainment. Health outcomes in children are relatively good, with a nearly 100 percent probability of surviving to the age of 5 and a less than 10 percent probability of being stunted. Beyond childhood, 88 percent of 15-year-olds survive until 60 years of age.

Table 1: The State of Human Capital Formation in Armenia

	**Human Capital Index.** A child born in Armenia today will be **57%** as productive when she grows up as she could be if she enjoyed full health and had a complete education.
	**Probability of Survival to Age Five. Ninety-nine** out of 100 children born in Armenia survive to the age of 5.
	**Expected Years of School.**. In Armenia, a child who starts school at the age of 4 can expect to complete **11.1 years** of school by her 18th birthday.
	**Harmonized Test Scores.** Students in Armenia score 443 on a scale where 625 represents advanced attainment and 300 represents minimum attainment.
	**Learning-adjusted Years of School.** Factoring in what children actually learn, the expected number of years of school is only **7.9 years.**
	**Adult Survival Rate.** Across Armenia, **88 percent** of 15 year olds will survive until the age of 60. This is a proxy for the health outcomes that a child born today would experience as an adult under current conditions.
	**Fraction of Children Under-five Not Stunted.** Ninety-one out of 100 children are not stunted. Nine out of 100 children are stunted and at risk of cognitive limitations that can last a lifetime.

Note: The large circle represents Armenia, while the small circles represent other countries, and the thick, vertical lines and colored circles reflect quartiles of the distribution.

The gaps in human capital formation have direct negative implications for future productivity in Armenia. In the long run, Armenia's per capita GDP could be 1.75 (1/HCI) times higher if Armenian children had a complete education and full health. The 2017 HCI also indicates that the current expected deficit in the future productivity of Armenian boys is higher than the deficit for girls. Armenian girls have higher expected years of school, better harmonized test scores, a lower probability of stunting, and a higher rate of survival after the age of 15. However, child survival is equally high among boys and girls, with 99 percent of Armenian children surviving to the age of 5. These outcomes have not remained static over time. Between 2012 and 2017, the proportions of boys and girls under the age of 5 who were not stunted increased by 0.12. However, expected years of schooling fell by 0.6 among boys and by 0.9 among girls. The other indicators and the overall HCI remained relatively constant (Table 2).

Table 2: Time Trends in Armenia's HCI by Gender

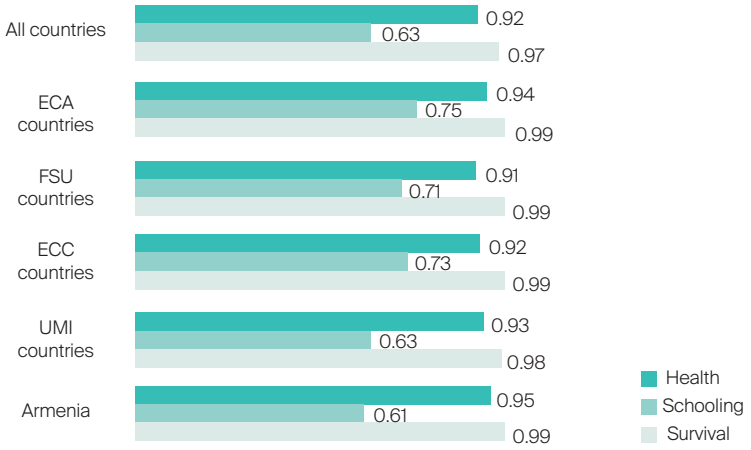
		2012			2017	
Component						
	Male	**Female**	**Overall**	**Male**	**Female**	**Overall**
HCI Component 1: Survival						
Probability of Survival to Age 5	0.98	0.99	0.98	0.99	0.99	0.99
HCI Component 2: School						
Expected Years of School	11.5	12.2	11.8	10.9	11.3	11.1
Harmonized Test Scores	439	448	443	439	448	443
HCI Component 3: Health						
Survival Rate from Age 15-60	0.82	0.92	0.87	0.83	0.93	0.88
Fraction of Children Under 5 Not Stunted	0.78	0.80	0.79	0.89	0.92	0.90
HCI	**0.56**	**0.61**	**0.58**	**0.55**	**0.59**	**0.57**

Disaggregating the average HCI by income quintiles also reveals disparities between children from poorer households and those from the richest households in terms of learning and healthy growth. The future productivity of a child born today in one of the richest 20 percent of households is 77 percent, while it is only 66 percent for a child born in one of the poorest 20 percent of households. The percentage of children in the top 20 percent of households who are not stunted is 94 percent, while it is 88 percent among those from the poorest 20 percent of households. Students from the richest 20 percent of households in Armenia score 483, while those from the poorest 20 percent score 417, on a scale that ranges from 300 (minimal attainment) to 625 (high attainment). However, there is little or no disparity between children in the poorest and richest households in terms of survival up to the age of 5 or expected years of schooling.

Human capital formation in Armenian children is lower than the levels in comparator countries. In 2017, Armenia's HCI at 0.57 was lower than the average for the transition countries of the former Soviet Union (FSU) countries (0.64), the countries in the European Economic Community (0.66), and the average for countries in Europe and Central Asia (ECA) (0.7). The lower value of the HCI in Armenia is primarily due to its poorer performance on expected learning-adjusted years of schooling, which is lower than the averages for the FSU and in ECA (Figure 4). However, the HCI for Armenia is higher than might be predicted for a country at its income level.

Figure 4:
Benchmarking

Source: *World Bank*



The HCI is a useful but imperfect proxy for the productivity implications of human capital formation, particularly health investments, in middle-income countries with a high burden of chronic diseases like Armenia. Specifically, the country's high adult survival rates on the HCI underestimate the non-fatal health risks to which children in Armenia today will be exposed as adults. These risks could lead to absenteeism, presenteeism (working while sick), and disability that reduces productivity. When disability-adjusted life years (a weighted combination of death and disability) is taken into account, the burden of chronic diseases is high in Armenia relative to countries with similar social and demographic indicators (Figure 5).[10] Also, the number of people granted disability status in Armenia in 2015 was 519 cases per 100,000 people, which is above the average of 495 cases per 100,000 people in European region of the World Health Organization (WHO).[11] The HCI will be updated periodically to monitor progress, and the components will be progressively tailored to different country contexts.

Figure 5:
Age-standardized Rate of Disability-adjusted Life Years, 2017

Source: Institute for Health Metrics and Evaluation (IHME). Note: UMI = upper-middle-income countries. Countries in the UMI category were chosen based on global burden of disease regional classifications, known trade partnerships, and socio-demographic indicators.

	Ischemic heart disease	Stroke	Neonatal disorders	Lung cancer	Cirrhosis	Respiratory infections	Diabetes	Congenital defects	COPD	Breast cancer
Armenia	**3,608.00**	**998.5**	**682.1**	**673.3**	**591.5**	**562.1**	**560.4**	**507.2**	**386.5**	**327.9**
UMI Average	2,449.00	673.9	1,998.40	768.2	1,193.40	644.5	635.9	656.8	747.2	381.3

Armenia's current performance in terms of human capital formation indicates that children are exposed to risks that will have negative implications for their productivity as adults, particularly in terms of schooling, performance on harmonized tests, and protection from non-fatal health risks beyond childhood. Armenia is an early adopter of the World Bank's Human Capital Project, which commits the government to investing in human capital development for inclusive growth. In Chapter 3, we will examine the determinants of human capital formation in Armenia to inform the development of national priorities to ensure the future productivity of Armenian children.

Meet the Harutyunyan's

The Harutyunyan family - Gayane, Razmik, Hmayak, and Marine - live in Shirakavan village in Shirak, the poorest marz (province) in Armenia.

Gayane, a 25-year-old woman, completed high school but does not work so that she can take care of her seven-year-old son, Hmayak, and three-year-old daughter, Marine.

Razmik, Gayane's husband, is a 30-year old man, who dropped out after middle school to work and support his parents. Razmik is now a migrant worker who lives in Russia and returns to the village one to two times a year.

We will follow the fictitious Harutyunyan family as they experience risks to their health and learning, make household decisions on investing in human capital, and benefit from government interventions aimed at fostering human capital formation.

CHAPTER 3:

The Drivers of Human Capital Development

To understand the drivers of trends in human capital development in Armenia, we draw on the framework described in Chapter 1 to examine the roles played by political commitment, fiscal space, household spending, and state programs in shaping access to learning, health, and skills for children and youths.

Political Context

Armenia is a landlocked, upper-middle-income country located in the South Caucasus Region. With an area of 29,743 square kilometers, Armenia's *de jure* population is estimated at 2.99 million. The country is divided into 11 administrative units, including 10 provinces (marzes) and the capital city of Yerevan. Armenia's capital is home to about one-third of its population, while 28 percent of the population reside in towns and another 36 percent in rural areas. Following the collapse of the Soviet Union in 1991, Armenia began introducing structural reforms to transition the country into a market economy. The first decade following the transition was characterized by socioeconomic polarization and a lack of transparency in politics and economics.

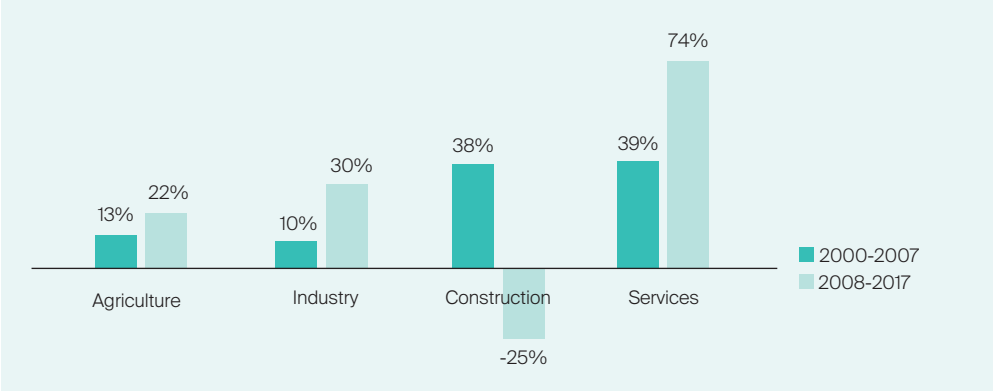
In the spring of 2018, large nationwide protests – referred to as the Velvet Revolution – led to a change in government. Nikol Pashinyan, a member of the parliamentary opposition who had led the protest movement, was elected the prime minister. In June 2018, the parliament passed a Government Program that included a commitment to improve governance, strengthen human capital development, and reduce poverty. Following national elections in December 2018, these commitments were reasserted in a new five-year Government Program that was endorsed by parliament. The high-level political commitment of the Government of Armenia to investing in human capital has laid the foundation for equipping the next generation to compete in the global economy.

Economic Growth and Fiscal Space

Before the global financial crisis in 2008-2009, Armenia's economy had experienced five years of double-digit growth rates. However, in 2009, the economy contracted by 14 percent, slowing to an average growth rate of 2 percent annually. Since 2008, services have been a key driver of the country's economic development, constituting 74 percent of total gross value added between 2008 and 2017 (Figure 6). The shares of agriculture and industry in gross value added were 22 percent and 30 percent respectively in the same period. Beginning in 2017, Armenia's economy has started to rebound with a growth rate in that year of 7.5 percent, driven by growth in external demand and a strong recovery in domestic demand due to increases in disposable income, remittances, and investments.

Figure 6:
Changes in Contribution to Gross Value Added

Source: *Statitical Committee of the Republic of Armenia*



While the favorable external conditions weakened slightly in 2018, growth remained resilient at 5.2 percent. The relative economic slowdown in 2018 was mostly due to less favorable external conditions, the slow execution of public capital expenditures, disruptions at two mines, and a weak agricultural harvest. In 2019, economic growth in Armenia was unexpectedly strong, expanding by 7.6 percent year-on-year, largely driven by private consumption that was fueled by increases in real wages and consumer loans. The export of goods and services also showed grew significantly, but this was offset by import growth, including a trebling of imports of vehicles in 2019 in advance of the hike in import duties starting in 2020. The contribution of investment to growth remained small.

While the external environment remains unfavorable and uncertain, the outlook for Armenia is generally positive, supported by prudent macroeconomic policies, sustainable public and external balances, and ongoing structural reforms. Following the exceptionally high growth rate in 2019, real GDP growth is expected to moderate but to remain healthy at above 5 percent in 2020 and to increase slightly over the medium term. An ambitious capital spending plan, strong credit growth from a healthy financial sector, and improved business and consumer confidence are expected to support domestic growth.

Over the medium term, the government has adopted reforms aimed at rebalancing the economy from being driven by demand to being driven by productivity, which should improve the country's economic prospects. Potential risks to the global outlook include policy uncertainties, financial disruptions and stress, heightened geopolitical tensions, and more frequent extreme weather events. These downside risks are likely to be amplified by the impact of the coronavirus on China's and global growth and trade, which in turn will negatively affect commodity markets and external demand. The important constraints to labor productivity within Armenia include skills gaps, misallocation of talent, and low labor force participation, which emphasizes the need for Armenia's growth model to prioritize investments in human capital (see box below).[12]

Labor Productivity and Human Capital Investments in Armenia

Labor productivity in Armenia has remained suboptimal, reflecting the country's lack of competitiveness. Labor productivity in Armenia is 1.5 times lower than the average for upper-middle-income countries and two times lower than the average in ECA. However, since 2006, information technology and high-technology sectors have become two of the fastest growing sectors in Armenia. Thus, it is becoming clear that human capital is essential to increasing the country's labor productivity.

Armenia faces three main supply-side constraints to raising labor productivity. First, the education system is not sufficiently aligned with the skills needed by the labor market, which means that opportunities are being lost to equip the workforce with the qualifications and skills to integrate into higher-productivity sectors. Second, currently workers are not being matched with appropriate jobs, resulting in the misallocation of skills. Third, aging and emigration have significantly reduced the size of the active working age population, while a significant share of women do not participate in the labor market despite having high educational attainment.

The lack of skills needed for jobs in higher-productivity sectors is especially relevant. Nonetheless, there is only a limited supply of vocational education and training courses in the country, which is resulting in an undersupply of skilled labor and missed opportunities for growth. There is also relatively low student enrollment in science, technology, engineering, and mathematics (STEM) at the tertiary level. In the 2019 Global Competitiveness Report, Armenia scored 0.00 out of 100 in the prominence of its research institutions, 3.9 out of 7 in the quality of its vocational training, and 3.7 out of 7 in the skillset of its graduates, ranking 84th, 86th, and 100th out of 141 countries respectively.

Investments in human capital – including increasing STEM enrollments and reforming education curricula – will be critically important in improving this situation in ensuring labor productivity continues to grow. The 2017 Systematic Country Diagnostic for Armenia acknowledges that the historical drivers of growth have run their course and identifies forward-looking options for fostering inclusive and sustainable growth to reduce poverty and foster shared prosperity. The proposed new model of inclusive growth will focus on boosting the accumulation and efficiency of labor and human capital to increase total factor productivity and to reduce disparities between the poor and non-poor. This model reflects global evidence on the critical importance of human capital to the adoption of advanced technologies within production processes.

Tax revenue as a percentage of GDP was 21.4 percent as of 2018, which is above the 15 percent threshold associated with strong growth and sustainable social spending.[13] However, the final general government consumption expenditure to GDP ratio in Armenia in 2018 (12.8 percent) was lower than the ECA average over the same period (19.7 percent). Thus, while the country's revenue to GDP ratio is consistent with sustainable social spending, its public spending on health and education is below that of its regional comparators. While tax revenue as a percentage of GDP increased in 2018 and 2019, there are indications – such as the high levels of private health spending – that this has not resulted in sufficient fiscal space to increase public health spending.

In 2018, Armenia's public spending on education was 2.1 percent of GDP, while public spending on health was 1.3 percent of GDP, both of which were below the ECA averages. In contrast, nearly 7.5 percent of GDP is spent on social protection, with 70 percent allocated to the pension system. Armenia spends disproportionately high amounts on defense, order, and public safety. In 2018, Armenia spent 16.5 percent of its budget on the military, while health was allocated 5.5 percent, education received 8.4 percent, and social protection was allocated 28.8 percent.[14] High government debt and debt service commitments leave little fiscal space for public spending. By the end of 2019, the general government gross debt had declined to 50 percent of GDP from nearly 54 percent of GDP in 2017, but the fiscal rule for Armenia requires that it must be reduced further. Despite positive economic trends, Armenia's moderate growth prospects and low public spending with limited fiscal space for health and education spending are constraining human capital development.

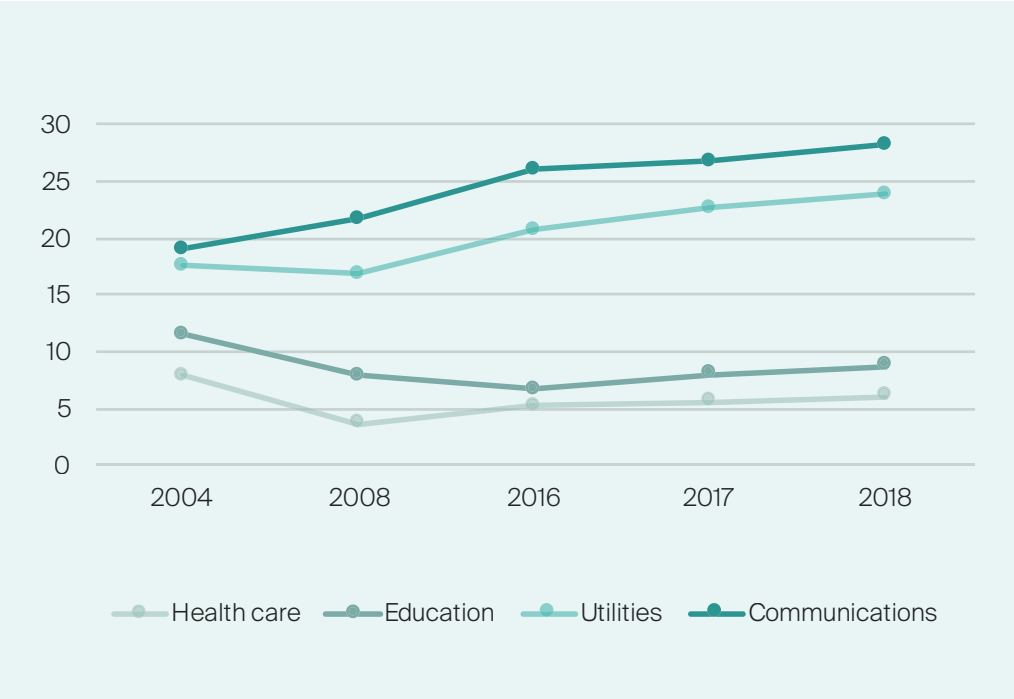
Household Income and Spending

Since 2004, economic growth has resulted in a fall in the poverty headcount ratio of over 50 percent.[15] Nevertheless, Armenia still has one of the highest poverty rates in ECA. The gains in productivity have not been distributed equitably, resulting in high economic inequality (Armenia's income Gini index is 35.9 percent) and in urban-rural disparities in economic development.[16] In 2018, an estimated 23.5 percent of Armenians were poor, a decrease of 2.2 percentage points relative to 2017. Thus, about 700,000 Armenians live on less than AMD 42,621 per month.[17] There is also significant variation in poverty rates across social groups and geographical areas. For example, poverty rates for children aged 0 to 5 and 6 to 9 years old (31.5 percent and 29.5 percent) are higher than the rates for other age groups.[18] Also, while 19.9 percent of the population in Yerevan is poor, the poverty rate in other urban communities is 30.3 percent while in rural communities, it is 21.3 percent.[19] This limits the ability of many households to invest in the health and education of their members.

Data on household spending patterns show that there has been a net decline in the proportion of spending on healthcare and education per person from 7.8 percent and 3.7 percent respectively in 2004 to 6.0 percent and 2.7 percent in 2018.[20] Survey evidence show shows that over 40 percent of Armenian youths do not consider a high-quality education to be a pre-requisite for productive employment, and in the regions and villages, young people are even more likely to regret having obtained a higher education.[21] These household spending trends may reflect a number of factors, including: (i) increases in public spending at the same time may have reduced the need for household spending (for example, per capita public health spending in 2004 was AMD 13,887, which increased to AMD 28,973 in 2016, both in constant 2016 AMD); (ii) negative perceptions about the returns to investing in human capital may have reduced incentives for households to spend on health and learning; and (iii) competing household-level needs may have limited opportunities to invest in human capital (as indicated by data showing increases in spending on utilities). Trends in household spending indicate that declines in spending on health and education are reversing, but it is still lower than in 2004 (Figure 7).

Figure 7:
Average Monthly Household Spending Per Capita

Source: *2019 Integrated Living Conditions Survey*



State Interventions in Education, Health, Social Protection, and Jobs

Education

Interventions: The Government of Armenia has implemented interventions to increase access to schooling and improve the quality of education to boost learning outcomes. The government developed a national curriculum framework with improved standards and syllabi. All schools were provided with computers and internet access for students and teachers as well as e-content. Teacher quality was improved by the introduction of a five-year certification system as well as by strengthening pre-service and in-service training. Innovative per-student financing was also introduced to increase school autonomy. The establishment of an Assessment and Testing Center has increased capacity and transparency in measuring student performance. Through community-based initiatives and school feeding programs, Armenia has also invested in increasing demand for schooling and in fostering local innovation to improve inputs such as equipment and pedagogical material. Furthermore, the quality of higher education has been bolstered by micro-projects supported through the Competitive Innovation Fund to improve the quality and increase the relevance and efficiency of schooling.

Achievements: These interventions have driven significant increases in school enrollment rates in Armenia. Between 2007 and 2017, the number of children aged 3 to 6 years old enrolled in preschool increased by 73 percent.[22] However, preschool enrollment in Armenia, at 30 percent, is still lower than the ECA average. Enrollment rates have risen to over 90 percent in primary and middle school in Armenia and are comparable to the corresponding ECA averages. In primary and middle school, boys and girls are equally likely to be enrolled. Between 2009 and 2017, enrollment in preliminary and secondary vocational schools rose from 14.9 percent to 20.2 percent (Table 3). These increases in enrollment were accompanied by a growth in the number of schools and in the supply of teachers, which led to an increase in student-teacher ratios, and a rise in the number of pre-primary educational institutions by 36.3 percent since 2009.

Table 3:
Gross Enrollment Rates in Primary, Middle, High, and Vocational School

Source: *Statistical Committee of the Republic of Armenia*

	Primary school (%)	Middle school (%)	High school (%)	Preliminary vocational institutions (%)	Secondary vocational institutions (%)
2009	110.8	92.1	83.9	6.4	8.5
2010	96.8	91.6	84.4	7.6	8.7
2011	99.0	91.8	72.8	4.4	9.2
2012	95.2	94.8	74.1	6.1	11.0
2013	94.1	92.6	74.0	7.2	12.2
2014	93.1	92.6	72.4	7.4	12.2
2015	94.8	83.7	57.9	7.2	10.9
2016	94.3	92.6	65.1	8.1	11.1
2017	91.3	90.1	65.5	8.6	11.5

.

Challenges: Despite these achievements, there are gaps in enrollment rates, inequalities in access to education, and deficits in the quality of schooling. High school enrollment rates fell from 83.9 percent in 2009 to 65.5 percent in 2017. In addition, the combined enrollment in vocational and high school of children aged 16 to 18 years fell from 98.8 percent to 85.6 percent. Boys are less likely than girls to complete a high school education, and the enrollment ratio of girls to boys increases to 1.21 beyond middle school. Preschool enrollment rates are also three times lower in rural areas than in urban areas on average. About 35 percent of children of late primary age who are in school are not proficient in reading, and 30 percent do not achieve minimum proficiency levels by the end of primary school.[23] A new measure, "learning poverty," identifies the percentage of 10-year-olds who cannot read and understand a simple story. In Armenia, learning poverty is 21.7 percentage points worse than the ECA average. Furthermore, the performance of the country's students on harmonized test scores has not improved since 2003, and these scores are lower than the averages for the FSU and ECA. Learning outcomes in rural areas lag those of urban areas. For example, in mathematics, the average 12th grade exam score of students from big cities was 14.3 compared to 11.9 for students from remote villages.[24] There is also low student enrollment in STEM education in vocational schools and at the tertiary level. These gaps in enrollment and learning have negative implications for Armenia's competitiveness. In 2017, Armenia was 90th out of 140 countries in the ease of finding skilled employees, indicating that the country was failing to equip its children with the right knowledge and skills to compete in the labor market.[25]

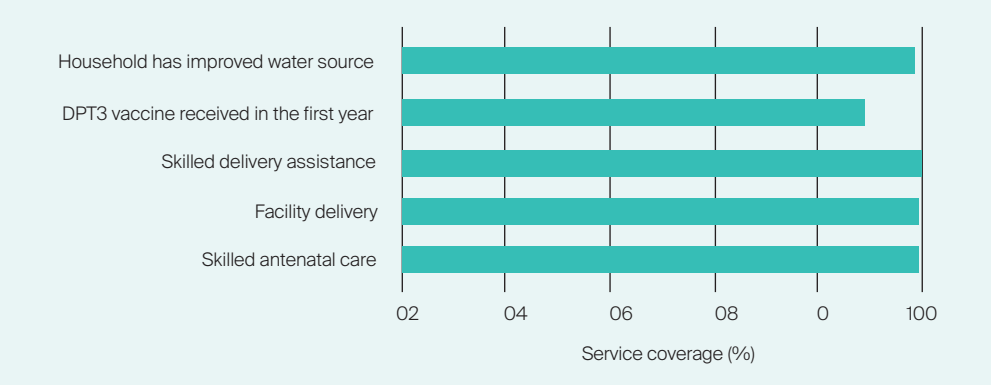
Health

Interventions: Armenia has undertaken significant reforms to increase access to and improve the quality of health services with the aim of improving child and adult health. The government introduced the concept of family medicine to improve the quality of basic health services. Most medical personnel at the primary healthcare level were given training in family medicine, and clinics were upgraded and equipped with the necessary infrastructure and inputs. In addition, hospital infrastructure was improved, and clinical staff were trained in case management. Performance-based financing was introduced to reward providers for increasing the coverage of antenatal care and for the early detection of chronic diseases. Other provider payment mechanisms, including capitation and case-based payments, facilitated the transition from financing inputs to rewarding service delivery results. Coincident with the establishment of the State Health Agency, an explicitly defined basic benefit package (BBP), which included a package of primary healthcare services, was extended free of charge to the general population, with the later inclusion of co-payments for selected services. Furthermore, the government introduced the Obstetric Care State Certificate and Child Health State Certificate to facilitate access to maternal and child healthcare free of charge and reduce financial barriers to accessing essential healthcare.

Achievements: These reforms drove increases in the use of primary and specialized health services that have helped to improve child health and adult survival. Between 1990 and 2017, life expectancy increased from 73.3 years to 78.7 years in females and from 66.7 years to 72.4 years in males. Since 2000, use of hospital inpatient services has steadily increased. Between 2001 and 2009, visits to primary healthcare facilities increased by almost 100 percent from 1.8 to 3.4 per capita. The increase in access to primary healthcare led to higher coverage of interventions essential for child and maternal survival and nutrition. In Armenia, 100 percent of pregnant mothers are supported by a skilled provider, 100 percent of births are attended by skilled health personnel, 100 percent of deliveries occur in a health facility, 98 percent of households have access to improved water sources, and 90 percent of children receive their third diphtheria-pertussis-tetanus (DPT3) vaccine in the first year (Figure 8).

Figure 8:
Coverage of Essential Maternal and Child Health Services in Armenia

Source: *Armenia Demographic and Health Survey 2015/16*



Challenges: As overall life expectancy has increased, the prevalence of chronic diseases has risen, and Armenia lags its peers in terms of healthy life expectancy. Its healthy life expectancy is 66.3 years compared to an average of 68.4 years in the WHO's European region. High out-of-pocket payments and gaps in the quality of care are the principal obstacles to chronic disease management. Users regularly bypass primary healthcare providers, who should be the first point of contact for users and who should coordinate all other providers, instead opting to consult specialists or emergency care providers, partly because of the perception that the quality of basic care is low. Up to 55 percent of Armenians experience financial barriers to healthcare use, as the BBP does not cover the full cost of outpatient medication and inpatient services for the entire population.[26] As a result, out-of-pocket spending represents 84.3 percent of current health spending in Armenia compared to a global mean of 18.2 percent.[27] An estimated 39 percent of this spending is for medicines and medical supplies, which are not covered through the benefits package for prevalent chronic diseases for the majority of the population. Other drivers of these high out-of-pocket payments for care are informal charges, which result from the underfunding of covered services by the state budget, and formal co-payments for expensive care. Given these financial barriers to access, Armenia's average of four outpatient visits per year is substantially lower than the WHO European average of 7.5 visits per year.[28] In one out of every four cases, survey respondents cited a lack of money as the reason why they did not receive the care that they needed.[29] The limited access to primary healthcare is accompanied by a high prevalence of chronic disease risk factors and a lack of efforts to prevent them. For example, more than one in two Armenian men is a daily smoker, and one-fifths of adults are insufficiently physically active.[30] The Institute of Health Metrics and Evaluation's healthcare access and quality index rating for Armenia is 70.7 out of 100. This index identifies deaths from causes that should not have occurred if quality health care were available. Therefore, the shortfall from 100 on this indicator shows that increasing the use of high-quality care could improve health outcomes in Armenia.[31]

Social Protection and Jobs

Interventions: Armenia has a well-developed social protection system (Figure 9). Through contributory and non-contributory benefits, social protection programs provide Armenian households with financial resources that can facilitate their access to healthcare and education. The largest contributory social protection program is the pensions program. The main non-contributory program, the Family Living Standards Enhancement Benefits (FLSEB) or Family Benefit Program (FBP), is a means-tested cash transfer program that also guarantees access to health, energy, and emergency benefits. There are also benefits targeted at childbirth, to working mothers with children up to 2 years of age, and to all mothers. To ensure that families are linked to appropriate social protection programs, over 500 social workers assess households for vulnerabilities, verify their eligibility for social assistance programs, and enroll and monitor them over time. These social workers receive technical guidance from the Ministry of Labor and Social Affairs (MLSA) but are contracted by marzes (38 centers) and municipalities (17 centers) under the Ministry of Territorial Administration and Infrastructure.

Figure 9:
Social Protection Programs in Armenia

Source: *WB-UNICEF. Armenia Social Protection System Assessment. Forthcoming.*

Social Insurance	Social Assistance	Labor market programs
Pensions • Old-age pensions • Long-term service pensions • Pensions appointed by law • Other pensions • Survivorship pensions • Disability pensions and (other special schemes) **Other social insurance** • Child care benefit • Sickness or injury leave benefit • Maternity benefit • Health insurance for civil servants • Mandatory pensions	**Cash transfers** • Family living standards enhancement benefit (FLSEB) • Maternity benefit for non-working women • Childbirth lump-sum benefit • Old-age social pension • Disability benefit • Survivorship benefit • Funeral grant • Financial support to schoolchildren in orphanages **Food, in-kind, and near-cash transfers** • School feeding • Subsidized baby food and related products • Targeted health, education, and housing or utility subsidies **Social care services for children, youth, disabled, and elderly**	• Vocational training at employer's premises for uncompetitive young mothers • Internships • Lump-sum compensation to the employer for training vulnerable jobseekers • Unemployment assistance benefit (for job search and relocation) • Child care assistance to promote re-entry before the second year • Financial support to those assisting persons with disabilities to gain a foothold in the labor market • Business start-up assistance • Job fairs

Achievements: Social transfers contribute significantly to increasing household income and reducing poverty in Armenia and may also help to increase the access of poorer households to health and learning. As of the end of 2018, the FBP reached almost 13 percent of the population or 101,127 households, of whom about 80,000 were families with children. While the FBP's coverage of the population in 2018 was lower than in previous years, the coverage of the poorest quintile had increased from 35.3 percent in 2016 to 39 percent in 2017, and the coverage of the poor (defined as those with consumption per adult equivalent below the upper total poverty line of AMD 42, 621 per month) increased from 24 percent in 2016 to 32 percent in 2018. The targeting of these benefits has also improved. In 2018, 76.5 percent of FBP beneficiaries belonged to the bottom two quintiles compared to 73 percent in 2016. Social transfers have a significant poverty reduction effect on beneficiary households. Pensions are the biggest component of social transfers and have the greatest impact in reducing poverty, accounting for a reduction of 19 percentage points in 2018. In comparison, the income support provided by the FBP accounted for a reduction of 2.3 percentage points in the national poverty rate.

Challenges: Challenges related to the coverage of the extreme poor, the amounts provided, and the public's understanding of social transfers have limited how much it has been possible to reduce household poverty in Armenia. About 60 percent of households in the poorest quintile do not receive the FBP. Also, the transfer amounts are often insufficient to lift families out of poverty. In 2017, the average monthly FBP transfer was 19 percent of the poverty line and 33 percent of the food poverty line, which is comparable to international standards. However, the FBP transfer was insufficient to lift some families out of poverty. Similarly, in 2017, the average pension transfer was only 73 percent of the minimum wage. Because social transfers do not necessarily have to equal or exceed the minimum wage, 27 percent of pensioners remain poor.[32] Evidence shows that a lack of understanding of the scoring formula for eligibility or difficulties accessing the territorial offices of the Ministry of Labor and Social Affairs prevent people from applying for benefits.[33] Labor market programs are few and small scale. In 2020, the government has re-introduced small-scale programs to support entrepreneurship and self-employment, which had been abolished in 2017. These issues mean that the social protection system in Armenia falls short of the ideal, which is the promotion of long-term household wellbeing and resilience through integrated delivery mechanisms, including interoperable information systems and reliable referral systems.

This assessment identifies the factors that enable and constrain human capital formation in Armenia. There is high-level commitment by political leadership to build human capital as well as the administrative mechanisms needed to identify and deliver programs to vulnerable groups. However, the limited fiscal space for human capital investments, particularly health, education, and employment programs, makes it difficult to fulfil those commitments. Concomitantly, there is a decline in household spending on healthcare and education. While the government has implemented interventions in health, education, and social protection that have facilitated improvements in survival and learning, addressing the persistent and emerging challenges to future productivity in each sector is a necessary step towards ensuring the future productivity of Armenia's children.

Politics, Policies, Programs and the Harutyunyan Family

Razmik was 14 years old when he dropped out of middle school. He was an excellent student and had aspired to be an engineer, but in the early 2000s, life was hard for his farming household. He recalled the feelings of hopelessness that his father had expressed when change did not follow the elections and protests. At the time, Razmik had no choice but to join his father in working on the farm and, many years later, to leave for Russia with a group of friends in search of greener pastures.

Although Razmik sent Gayane almost everything that he earned from his seasonal work in construction, his young family was only just able to get by. While his children could visit the family doctor for free when they were sick, the family had to pay for the expensive medicines from the local pharmacy. Gayane was asthmatic and needed daily medication, so things were very difficult.

Razmik wanted a better life for Hmayak and Marine than he and Gayane had experienced. He hoped that both of his children would attend a university in Yerevan. However, the chances that Hmayak would finish high school were slim – leaving the small village for work in Russia was still a popular choice for young boys. Also, the schools in Shirakavan, while better than they were when Razmik and Gayane attended them, were no match for schools in the city. How would Hmayak compete?

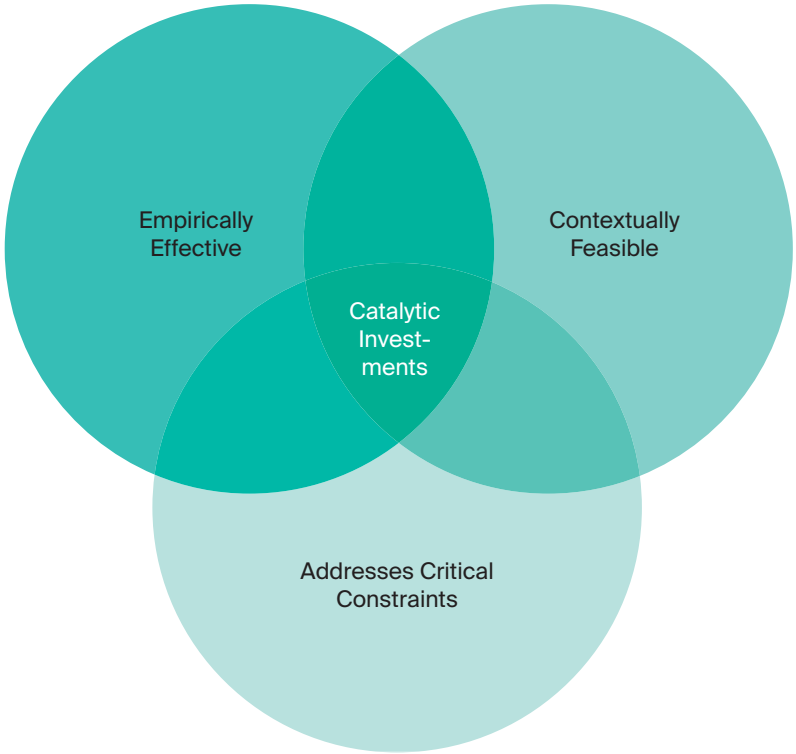
It was 2018 and the velvet protest had just ended. Razmik, like many other residents in his village, had joined the leaders of the opposition, marching from Gyumri, full of hope for a changed Armenia. A new government had been formed, and Razmik was hopeful that, this time, the outcome held the promise of a better future for his Hmayak and Marine.

CHAPTER 4:

Catalyzing Human Capital Formation in Armenia

As an early adopter of the Human Capital Project, Armenia has committed to making the catalytic investments that will close the gaps in productivity that arise from exposure to health and education risks. These investments must overcome constraints to accessing and improving the quality of essential interventions in health, education, and social protection within the Armenian context (Figure 10). In consultation with policymakers in each sector, we have identified interventions that have been empirically demonstrated to be effective in alleviating critical challenges to human capital accumulation and that are also feasible to implement in Armenia.

Figure 10:
What Makes an Investment Catalytic?



Education

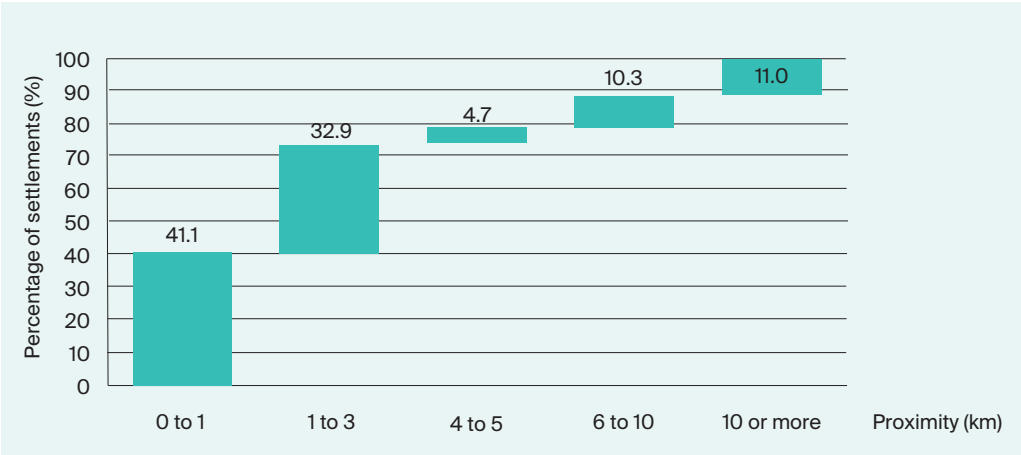
In consultation with the Ministry of Education, Science, Culture, and Sport, we have identified two interventions to increase the number of expected learning-adjusted years of schooling in Armenia: (i) scaling up alternative preschool education models to reduce social disparities in preschool enrollment rates and (ii) scaling up the "Armath" engineering laboratories program in secondary schools nationwide to ensure that STEM education translates into innovation.

1. Scaling up alternative preschool education models

Addressing deficiencies in schooling must begin at the preschool level as early childhood education creates a foundation of cognitive, physical, and social development in children that will help them to learn throughout lives. Low preschool enrollment is predominantly a challenge in rural areas in Armenia, where a small number of children and limited budgets at the community level make the traditional kindergarten model financially unsustainable. As a result, only 41 percent of rural settlements have a preschool facility located within one kilometer, which is the minimum permissible distance (Figure 11).[34] Therefore, an alternative cost-effective model of preschool education has been developed for these communities by UNICEF. This model is based on global research that suggests that the number of years of preschool attendance is more essential to successful learning outcomes than the number of hours per day of preschool attendance.

Figure 11:
Proximity of the Closest Preschool Institution to Rural Communities

Source: *Social Snapshot and Poverty in Armenia 2016*



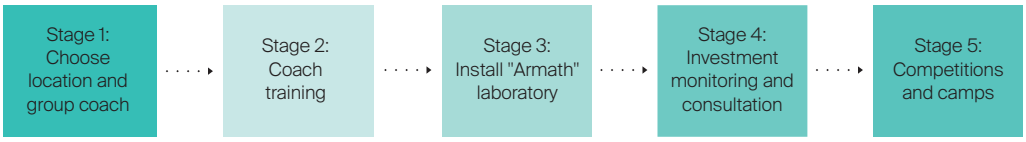
In a pilot in the Tumanyan consolidated community in the Lori marz, suitable community spaces were converted into classrooms for 10 to 15 children aged between 3 and 6 years old. The children visited the center for three to five hours per day each week and were provided with a comprehensive early childhood development program that focused on literacy, numeracy, cognitive development, and socioemotional development. Local facilitators were selected by the community and trained. The model required smaller community spaces and fewer human resources than the traditional kindergarten model, thus reducing the cost of maintenance and consumables. This alternative model of preschool education for rural and low-income communities is up to five times more efficient than the traditional model and has increased preschool enrollment.[35] Scaling up alternative preschool models to the 201 communities in Armenia that lack traditional kindergartens could increase preschool enrollment in a cost-effective manner as well as reducing inequalities in enrollment efficiently.

2. Scaling up the "Armath" engineering laboratories program nationwide

In an interconnected and competitive global economy, STEM education has a central role to play in enabling the students of today to participate actively in knowledge-based innovation. Low levels of STEM enrollment in vocational and tertiary education in Armenia are a constraint to building a skilled workforce for high growth sectors. In addition, an assessment by the Enterprise Incubator Foundation of the skills of Armenian graduates working in information technology and engineering found that 73 percent of respondents considered that the practical knowledge of these graduates was below expectation.[36] Thus, curricular and pedagogical approaches must be tailored to ensure that STEM education translates into innovation. This will require transitioning from didactic teaching and passive learning to active and experiential learning, from reproduction of theory to adaptation and transformation of procedures, and from compliance to critical interpretation of lessons with corresponding actions.

Figure 12:
Implementation Stages for the "Armath" Engineering Laboratories Program

Source: *Grant Thornton Consulting CJSC, 2017*



The “Armath” engineering laboratories program in Armenia has emerged as a model that applies an innovative curriculum and pedagogical approach to STEM learning that is effective and scalable (see Figure 12). Implemented since 2014, the “Armath” model exposes children between 10 and 18 years old to STEM education through interactive after-school classes, competitions, and camps. The model is based on learning tools developed by the Massachusetts Institute of Technology. It begins with basic programming and progresses to robotics and production in an environment that encourages exploration and creativity. A 2017 evaluation by Grant Thornton Consulting CJSC revealed significant positive results. Up to 43 percent of graduates of the program were employed, of whom 45 percent were involved in programming and 12 percent had founded startups, with an average income of AMD 132, 561. The net present value of the project was estimated at AMD 47 billion, which accounted only for the direct impact of the initial laboratories, while the internal rate of return of the project was estimated to be 100 percent.

Health

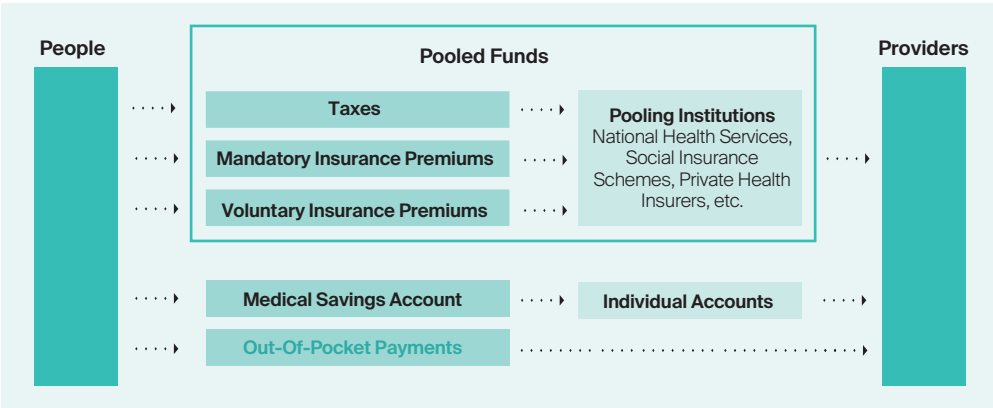
In consultation with the Ministry of Health, we have identified two catalytic interventions to improve the health system’s response to chronic diseases: (i) reducing out-of-pocket payments, which constitute a barrier to healthcare use, and (ii) strengthening primary care to ensure effective service delivery.

1. Reducing out-of-pocket payments through revenue mobilization and strategic purchasing

Out-of-pocket payments are a significant barrier to healthcare use in Armenia, especially in conjunction with corresponding low levels of public health expenditure.[37] Increasing public health expenditure on a benefits package that covers prevalent medical conditions and expensive medication would be a critical step to take to reduce out-of-pocket payments and increase the use of necessary care. Barriers to healthcare use lead to a higher prevalence of fatal and non-fatal health outcomes. As health shocks are largely unpredictable at the individual level, it is a stylized fact that reducing reliance on direct, out-of-pocket payments for these unpredictable shocks will increase access to health services, enabling better management of chronic diseases and increasing productivity in adulthood. To this end, pooling funds that are prepaid ensures that unpredictable financial and health risks at the individual level become more predictable when aggregated across members of the pool and, where the pool is sufficiently large and mixed, enables resources to be redistributed to those individuals with the greatest health needs and the lowest incomes. Through prepayments, individuals contribute to a pool financed by general tax revenue, mandatory payroll deductions, and voluntary insurance premiums that they, or others, can draw on in the event of illness (Figure 13).

Figure 13:
Prepaid and Pooled Funds Versus Out-of-pocket Payments

Source: *Results for Development Institute*



Those countries that have made the most progress in increasing access to care while also improving financial protection have tended to require mandatory contributions from people who can afford to pay them while progressively mobilizing more domestic resources for health. When contributions are not mandatory, individuals with lower risk, often the young and rich, are more likely to opt out of the pooling mechanism and thus reduce its ability to cross-subsidize risk. However, mobilizing additional funds alone will not necessarily increase healthcare access in Armenia. When sufficient financial resources are pooled, strategic purchasing is also an essential tool for reducing out-of-pocket payments. In the Armenian context, strategic purchasing can ensure that the benefits package includes services that are essential to chronic disease management and the cost of which may be prohibitive for households and can ensure that funds are targeted to priority groups. While the composition of the benefits package in Armenia was originally defined by estimates of disease burden and cost-effectiveness, it has subsequently been changed unsystematically in response to political lobbying. In addition, the provider contracting process incorporates incentives aimed at increasing efficiency and primary healthcare use. However, strategic purchasing can also be leveraged to improve the quality of care and inform the periodic revision of the benefits package to reflect population health needs. These strategic purchasing functions have not been systematically performed by the State Health Agency, third party administrators, or other health authorities. Therefore, mobilizing additional revenues, pooling them through prepayment, and adopting strategic purchasing are all essential to strengthening Armenia's response to chronic diseases.

2. Ensuring effective chronic disease management by strengthening primary care

Managing chronic diseases effectively is a major challenge for health systems globally, including countries like Armenia that have been more successful at providing acute, episodic care for maternal and child health than long-term and coordinated care for chronic conditions. Armenia has made significant investments in primary healthcare, particularly by introducing family medicine as a specialty and adopting capitation and performance-based financing to increase the coverage of key services. However, the system remains hospital-centric (several conditions that can be treated in lower-cost primary healthcare are treated in hospitals), a model that global experience has shown to be both inefficient and ineffective at managing chronic diseases. The family physician is often not a patient's first port of call during illness. In over 63 percent of cases, service users visit the hospital without an initial consultation or referral from a primary healthcare facility.[38] This pattern is driven by multiple factors, including the low quality of care at the primary healthcare level, the persistence of the polyclinic model (without gatekeeping between specialist and generalist care) in urban areas, and the perverse incentives that may be presented by provider payment methods. For example, capitation payment mechanisms, while promoting preventive care to reduce overall spending, and encouraging efficiency by capping total spending, may incentivize excessive referrals to specialized care. The World Bank's Primary Health Care Performance Initiative, which drew on reviews of empirical evidence and consultations with leading global experts, has identified the key characteristics of high-quality primary healthcare systems as seen in Figure 14.

Figure 14:
A Framework for Providing High-quality Primary Healthcare

Source: *World Bank's Primary Health Care Performance Initiative*

The health systems that have been proven effective at responding to chronic diseases have several distinct features, including: (i) multi-disciplinary primary healthcare teams who coordinate the patient's care and provide comprehensive services including preventive treatment of chronic diseases; (ii) stratifying patients and proactively targeting high-risk individuals with higher intensity care; (iii) robust gatekeeping and referral mechanisms that disincentivize bypassing the primary healthcare team and that coordinate with specialist care and public health services; (iv) clinical guidelines and information systems that support risk-stratified decision-making and coordination of care; (v) measurement and certification systems that track the performance of teams and that guarantee minimum service delivery standards; and (vi) an incentive structure including provider payment mechanisms that facilitate effective service delivery, including coordination among different healthcare providers.[39] In order to align Armenia's health system with this model, significant investments will be necessary to improve the quality of primary healthcare and institute care pathways that ensure the central role of primary care provider.

Social Protection and Jobs

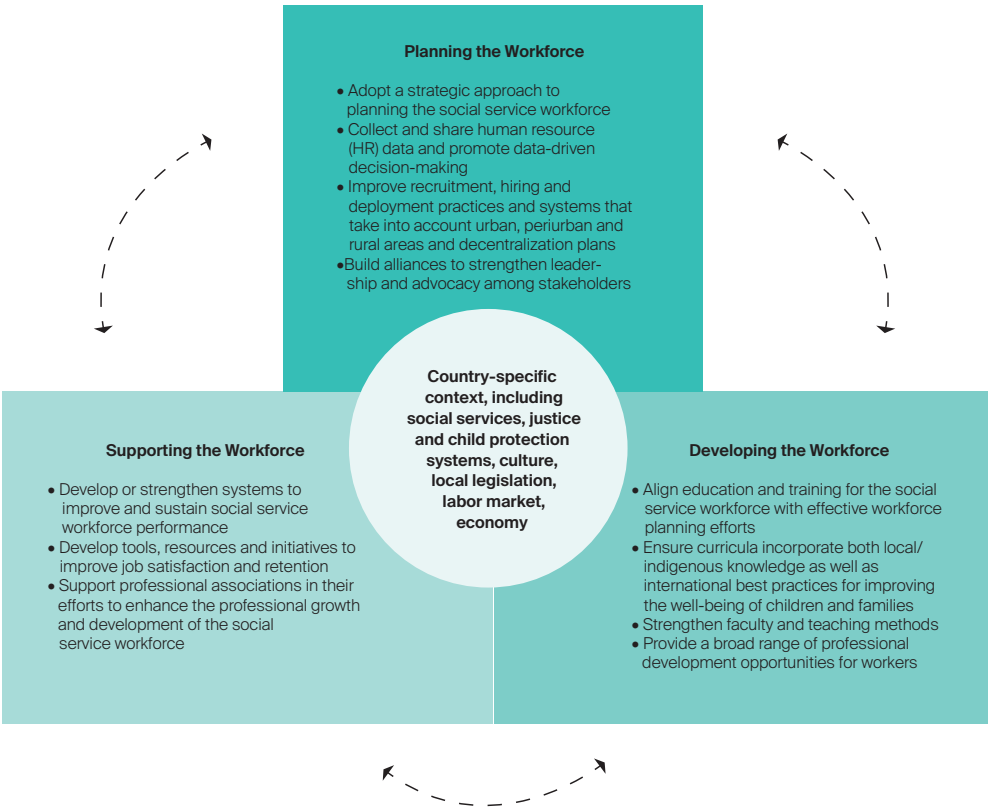
In discussion with the Ministry of Labor and Social Affairs, we have identified two catalytic interventions in the area of social protection and jobs to build and activate human capital: (i) integrating social case management and referral through social case managers to help the most vulnerable families to access education and health services and (ii) expanding the supply and increasing the effectiveness of employment promotion programs.

1. Increasing access to integrated social services through social case managers

Given the current moderate growth projections, social transfers will continue to be an important mechanism for increasing the income of poor families and for facilitating their access to healthcare and education. However, poorer households find it difficult to access social transfers and services due to inadequate targeting, a lack of information, illiteracy, problems with fulfilling the administrative conditions for accessing benefits, and geographic barriers to accessing public offices for processing. Social case managers can play an important role in addressing these issues by conducting proactive searches for cases, informing vulnerable populations about their benefits, referring them to the appropriate services, and helping them to prepare the required documentation and to navigate the system as needed.

Figure 15:
Framework for Strengthening the Social Service Workforce

Source: *Gobal Social Service Workforce Alliance*



Social case managers are also well-placed to include health promotion and other disease prevention activities in their interactions with households, thus providing them with a range of integrated social services. The government – with support from the World Bank, UNICEF, and other development partners – has taken actions to increase the capacity of social workers to provide integrated social services by linking poor and vulnerable families with services that promote the development of their human capital. However, evaluations of these actions have shown that social workers have significant gaps in their training, that they often fail to include health promotion in their interactions with households, and that funding constraints limit any further scale-up of integrated social services.[40] Therefore, improving the selection, training, and retention of motivated social case managers is essential to strengthening social assistance programs and reducing household poverty in Armenia.[41] The Global Social Service Workforce Alliance has produced a Social Service Workforce Strengthening Framework consisting of evidence-based strategies that are relevant for planning, developing, and supporting the social service workforce, which are applicable to the Armenian context (Figure 15).[42]

2. Expanding the supply and increasing the effectiveness of employment promotion programs

Jobs are the vehicle for activating human capital. They transform a healthy, knowledgeable, and skilled workforce into innovation and productivity that drives economic growth. The human capital strategy for Armenia must include interventions to ensure that the investments in increasing healthy life expectancy, enrollment rates, and learning translate into greater labor force participation by reducing inactivity rates. Up to 37 percent of the working age population is not in the labor force in Armenia.[43] Women in both urban and rural areas are 16 percentage points less likely to be employed than men. In 2017, more than one in four people aged 15 to 24 years old were not in employment, education, or training (NEET) in Armenia compared to an average of one in six people in ECA. This low labor force participation is driven by information asymmetries that prevent appropriate matches between employers and jobseekers and by the failure of employment promotion programs to meet the needs of women and of first-time and less-educated job seekers. Hence, Armenia's Labor Market Strategy 2019-2024 proposes to invest in job-matching policies, including online portals linking job seekers to vacancies and providing data on the supply and demand for specific skills. Another aim of the strategy is to increase the training of State Employment Agency staff to profile and target employment services to jobseekers.

Armenia's path from the challenges of today to improved human capital outcomes tomorrow will require investments in interventions that will promote access to healthcare and learning opportunities (Figure 16). By identifying the current constraints to human capital formation in Armenia and reviewing the potential for overcoming these constraints in each sector, we have recommended several interventions that can catalyze human capital formation in the current and next generations. In the next chapter, we will identify the key factors that will make it possible to implement these catalytic investments.

Figure 16:
Facilitating Armenia's Path from Today's Challenges to Tomorrow's Human Capital Outcomes

Challenges	Critical Constraints	Catalytic Investments	Outcomes
~57% productivity relative to optimal health and education 11.1 years of schooling completed relative to expected 14 years Adjusted for learning only 7.9 years of schooling completed relative to expected 14 years Average score of 443 on harmonized tests relative to advanced attainment score of 625 Only 88% of children aged 15 years survive until age 60 Higher incidence of disability, heart disease, stroke, diabetes, and breast cancer than comparator countries	**Education** Low rural pre-school enrollment: - Undersupply of facilities - Norm financially unsustainable STEM graduates lack practical knowledge: - Didactive and pasive learning **Health** Financial barriers to health care: -Low public health spending -Non-strategic purchasing of services Hospital-centric service delivery: - Primary care quality gaps - Perverse provider incentives **Social Protection and Jobs** Gaps in access to social transfers among the poor: - Information and geographic barriers - Sub-optimal targeting High inactivity rates among women and youth: - Information asymmetry - Sub-optimal targeting	**Education** Scaling up the United Nations Children's Fund's alternative, cost-effective pre-schooling models Scaling up the "Armath" engineering laboratories program for innovative approaches to STEM learning **Health** Increasing pre-paid and pooled resources for health and alignment with value through strategic purchasing Investing in improving the performance of primary healthcare **Social Protection and Jobs** Increasing access to integrated social services through trained and motivated social case managers Expanding the supply and increasing the effectiveness of employment promotion programs including job-matching and other support	Increase in future productivity from better health and learning Increase in pre-school enrollment Increase in years of attained schooling Improved performance of students on harmonized tests Improved practical knowledge of STEM graduates Improved adult survival Reduction in chronic disease complications

Catalytic Human Capital Investments and the Harutyunyan Family

Razmik and Gayane were excited because a new kindergarten had opened in the village. Before now, they had worried about the cost of sending Marine to the nearest preschool, located 3 kilometers away. Hmayak had not attended preschool and had received makeshift lessons from Gayane instead. The new kindergarten in the village was closer to home and much less expensive so Gayane might even be able to do seasonal work to add to the family income.

Two months before, the Minister of Health had announced that the government would start a new program – Universal Health Coverage, they called it. Razmik had found out that every Armenian would be able to see a family physician and receive medication for common illnesses completely free of charge. When Gayane went to the pharmacy to refill her prescription, she found out that her medication was on the official list.

For years, Razmik and Gayane had thought they were ineligible for the family benefit program. Recently, a social case manager visited their household and asked them a few questions. After a visit to the territorial office to fill an application, they started receiving help from the government.

A recent call for manual workers to help to build an extension of the rural road network through the Lifeline Road Network Improvement Project had given Razmik the opportunity to move back to Armenia. With earnings from this job and reduced household spending, he and Gayane finally had enough to set aside for a rainy day and maybe for their children's future. For the first time, in a long time, Razmik was filled with hope.

CHAPTER 5:

Moving from Ideation to Implementation

Moving from the ideation of these catalytic interventions to their implementation will require collaboration between relevant stakeholders within Armenia, expanding the fiscal space for these investments, focusing strongly on learning from results, leveraging external partnerships, and deploying technology to accelerate access to these human capital interventions.

A Whole-of-Society Approach

Implementing interventions to address constraints to human capital formation in Armenia will require a whole-of-society approach involving public agencies, civil society, academia, the media, families, and communities. In anticipation of the need for high-level political coordination, the Government of Armenia has constituted an inter-agency steering committee led by the Deputy Prime Minister to identify, initiate, and monitor strategic investments for human capital development. This steering committee can facilitate the participation of civil society and the private sector to build local ownership for the human capital development strategy.

Mobilizing and Maximizing Resources

In the short term, there will need to be a costing of the proposed interventions to estimate the resources required to achieve the targeted results. The Government of Armenia will need to mobilize additional domestic resources for human capital development, particularly in the health and education sectors. One option might be to place excise taxes on goods that have deleterious health effects – such as alcohol, tobacco, and sugar-sweetened beverages. This would generate public revenues, reduce public and private health spending, and increase productivity by reducing disease and premature deaths. Because of the country's fiscal constraints, attention must also be paid to increasing the efficiency of current spending. Preferentially targeting regions and groups that are lagging behind in their human capital outcomes can maximize value for money and accelerate progress in improving learning and health outcomes, while also narrowing inequalities.

Measuring, Learning and Adapting

A strong focus on defining and measuring the results of interventions will ensure accountability across all stakeholders and make it possible to adjust the human capital investment portfolio based on the evidence. It will be imperative to develop a monitoring and evaluation framework that will enable stakeholders to draw causal connections between the investments, their intermediate results, and their impact on health and learning outcomes. The framework would identify key standards to be maintained in data collection and analysis, context-specific indicators for the results chain, and levels of disaggregation, such as regional, urban-rural, age groups, social groups, and gender. While the responsibility for collecting and analyzing the data would lie with sectoral agencies, the inter-agency steering committee should periodically review progress towards developing human capital in each sector and should refine the investment portfolio accordingly.

Leveraging External Partnerships

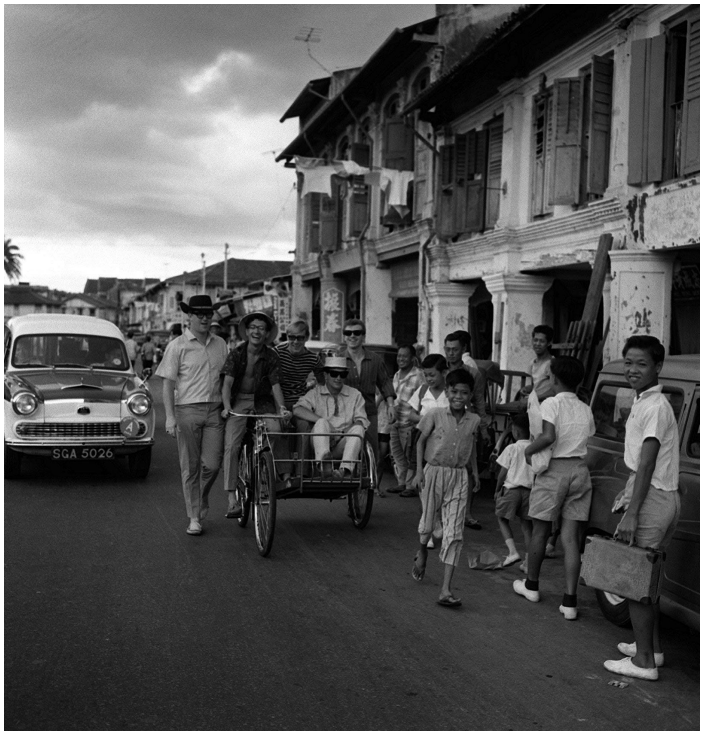
The Government of Armenia may also need to form strategic partnerships with external stakeholders who are aligned with the objective of human capital development, have a comparative advantage in terms of technical expertise for the design of the proposed interventions, and can provide financial support for the catalytic human capital investments. The World Bank Group is such a partner. Its Country Partnership Framework FY19-23 for Armenia identifies human capital development as a priority investment in the medium term. Given its extensive experience in structuring and implementing strategic investments globally, the World Bank Group is well-placed to build the technical capacity necessary to undertake catalytic investments in health, education, and social protection in Armenia. The Bank can also engage other development partners and local stakeholders to support the strategy and commit significant financial resources to these investments.

Deploying Technology to Accelerate Impact

Technology is a rapidly growing sector and the largest contributor to foreign investments in Armenia and can be leveraged to ensure that social services can be delivered in an affordable manner. For example, telemedicine can give health service users in remote and rural areas access to high-quality providers at a reduced cost. Also, machine learning can draw on the vast amounts of data on citizens to define who to target with social assistance. Meanwhile, having interoperable information systems for the health, education, and social protection sectors can facilitate the wholistic development of human capital among the population, thus improving overall outcomes. These examples demonstrate how technology can overcome barriers to accessing human capital interventions, improve the quality of social services, and strengthen the targeting and monitoring of programs.

CHAPTER 6:

Towards a Strategic Focus on Human Capital Development



After Singapore became independent, its economic outlook was uncertain as a small island country that was home to 2 million people with no natural resources. In the decades that followed, Singapore would develop into one of the world's most competitive economies with a GDP of US$58,248 per capita in 2018. The rapid growth of Singapore's economy was primarily driven by the expansion of the manufacturing and services sectors, enabled by a strategic focus on human capital investments (see box below).[44] Singapore now ranks as the best country in the world in terms of human capital development. The Singaporean case illustrates what can be achieved in terms of economic growth by ensuring that the population is healthy, knowledgeable, skilled, and matched to high-productivity jobs.

The Singaporean Growth Miracle: Powered by Strategic Human Capital Investments

Singapore is a small country that is home to about 5.6 million people. Lacking in natural resources, Singapore's growth has been driven by its focus on human capital investments. The results are astounding. Between 1965 and 2017, Singapore's per capita GDP in constant 2010 US dollars has increased from US$ 4,000 to US$ 58,248.

From the early 1960s to the late 1990s, an educated and skilled labor force facilitated economic diversification and export upgrading. Initial investments in education focused on increasing coverage of basic education for labor-intensive manufacturing. However, the government progressively shifted its focus from the coverage of basic education to improving the quality of upper-secondary, tertiary, and vocational education, which facilitated the growth of technology-intensive manufacturing. The development of human resources was a core element in every strategic economic plan during this period. A government institution – the Ministry of Manpower – was set up with the objective of leading policy development for building human capital. The "Manpower 21" blueprint outlined a plan to enable Singapore to become the talent capital of the world through the constant improvement of employee skills and knowledge. For example, through the skills development fund, employers were compelled to contribute to skills development.

Investments in learning were paralleled with efforts to develop a health system that facilitated access to care. Government regulation exerted downward pressure on healthcare costs and reduced financial barriers to access. Health facilities are largely public, physicians are employed by the state, and reimbursable medication are pre-specified. The extensive formalization of the rapidly growing economy allowed Singapore to implement health insurance funded through payroll taxes to individual-level health savings accounts. Limiting coverage to hospitalization and capping government expenditures further contained health expenditures from these "Medisave" accounts. Through "Medishield," funds are pooled across all the insured to cover the expenses of major or prolonged illness, and through "Medifund," vulnerable groups are covered by general government expenditure.

Singapore is now a high-income country and has the best human capital outcomes in the world. A child born today in Singapore will attain 88 percent of her full productivity as an adult given the current health and learning environment. The Singaporean example illustrates the potential gains that can be reaped by adopting a strategic focus on human capital investments.

The evidence on the substantial returns to human capital formation is strong. A large and growing body of research demonstrates that public investments in education and health are significant drivers of inclusive growth.[45] Despite this evidence, World Bank research shows that, as countries graduate from softer financing to obtaining finance at near-market rates as Armenia has recently done, there is a disproportionate decline in the share of lending for education, health, and social protection.[46] As an early adopter of the Human Capital Project, Armenia is poised to avoid this grave mistake. Faced with an aging population, fiscal constraints, and technology-driven changes in the labor market, Armenia is committed to ensuring that the current and future generations of workers are competitive as both an intrinsically important and macro-critical objective. This priority for human capital formation must be reflected not only in stated political commitments but also in financing and planning for economic growth.

Like Singapore, Armenia's primary resource is her people.

Hence, this assessment provides suggestions for how to develop, plan, and finance a multisectoral strategy to build their skills and capacity. We have examined the current state of human capital formation in Armenia, highlighting successes in terms of child survival and nutritional status, while also flagging challenges in terms of lagging enrollment rates, learning outcomes, and healthy life expectancy. We have highlighted the opportunity to accelerate human capital development arising from the government's commitment to good governance that followed the Velvet Revolution, while acknowledging the constraints presented by fiscal space limitations, issues of the coverage and quality of essential health, education, social protection, and jobs interventions, and declines in household spending on human capital. Finally, in partnership with national policymakers, we have highlighted some important catalytic investments that have the potential to overcome the binding constraints to improving health and increasing learning in Armenia.

The next phase of the human capital policy dialogue in Armenia should focus on putting this strategy into practice. This will involve: (i) developing a plan for implementing the proposed catalytic interventions; (ii) undertaking costing exercises for each intervention; (iii) defining the mechanisms for monitoring progress in implementing the strategy and subsequent changes in human capital outcomes; (iv) specifying the criteria and mechanisms for targeting investments to social groups or regions with poorer human capital outcomes; and (v) identifying ways to finance these reforms including improving tax administration, introducing new taxes, reprioritizing human capital spending in the state budget, and increasing the efficiency of sectoral spending. The World Bank Group remains committed to providing technical and financial support for operationalizing and implementing this ambitious strategy.

There will be costs to failing to take action to build human capital in Armenia. A growing chronic disease burden and an under-skilled and mismatched workforce will exacerbate significant growth and innovation challenges in the medium to long term in the absence of any reforms to increase the rate of human capital formation. For example, the total cost of chronic diseases to the Armenian economy is AMD 362.7 billion per year, equivalent to 6.5 percent of the country's annual GDP in 2017, as a result of lost productivity and the cost of treatment.47 Thus, Armenia stands at an important crossroads. Human capital investments can be a way to reduce inequality of opportunity, stabilize demand during economic shocks, smooth consumption, and protect vulnerable groups during structural changes. For children like Hmayak and Marine, decisions made today to invest in access to quality healthcare, learning opportunities, social protection, and labor market interventions will determine their ability to compete in the global marketplace of tomorrow.

1 World Bank. (2018). *The Changing Nature of Work: World Development Report 2019,* Working Draft. Retrieved from http://pubdocs.worldbank.org/en/816281518818814423/2019-WDR-Draft-Report.pdf
2 Lange, G-M., Wodon, Q., Carey, K. (2018). *The Changing Wealth of Nations 2018: Building a Sustainable Future.* World Bank, Washington, DC.
3 Heckman, J. (2000). Policies to foster human capital. *Research in economics* 54(1), 3-56.
4 Becker, G.S. (1975). *Human Capital*. 2. Aufl., New York.
5 Azariadis, C., and J. Stachurski (2005). *Poverty traps. Handbook of economic growth*, 1, 295-384.
6 Hergnyan, M., S. Hovhannisyan, and S. Grigoryan (2014). *National Competitiveness Report of Armenia 2013-2014: Growth Imperative and Constraints.* EV Consulting, Economy and Values Research Center.
7 Kraay, A. (2018). Methodology for a World Bank Human Capital Index. World Bank.
8 World Bank. (2018). The Changing Nature of Work: World Development Report 2019, Working Draft. Retrieved from http://pubdocs.worldbank.org/en/816281518818814423/2019-WDR-Draft-Report.pdf
9 Kraay, A. (2018). *Methodology for a World Bank Human Capital Index.* World Bank.
10 The Institute for Health Metrics and Evaluation (IHME). (2019). Retrieved from http://www.healthdata.org/armenia
11 European Health for All database. (2019). Retrieved from https://gateway.euro.who.int/en/datasets/european-health-for-all-database/
12 World Bank (2017). *Future Armenia: Systematic Country Diagnostic,* November 2017.
13 Coady, David (2019). "Creating fiscal space." *Finance and Development.* December 2018. Vol. 55, No.4. International Monetary Fund; World Bank. World Development Indicators, 2019.
14 World Bank (2019). World Development Indicators, http://databank.worldbank.org/data/source/world-development-indicators.
15 Statistical Committee of the Republic of Armenia (2018). *Social Snapshot and Poverty in Armenia.* Retrieved from https://www.armstat.am/en/?nid=82&id=2095
16 Statistical Committee of the Republic of Armenia (2018). *Social Snapshot and Poverty in Armenia*. Retrieved from https://www.armstat.am/en/?nid=82&id=2095
17 Statistical Committee of the Republic of Armenia (2019). *Social Snapshot and Poverty in Armenia.* Retrieved from https://armstat.am/file/article/poverty_2019_english_2.pdf
18 Statistical Committee of the Republic of Armenia (2019). *Social Snapshot and Poverty in Armenia.* Retrieved from https://armstat.am/file/article/poverty_2019_english_2.pdf
19 Statistical Committee of the Republic of Armenia (2019). *Social Snapshot and Poverty in Armenia.* Retrieved from https://armstat.am/file/article/poverty_2019_english_2.pdf
20 Statistical Committee of the Republic of Armenia (2018). *Social Snapshot and Poverty in Armenia.* Retrieved from https://www.armstat.am/en/?nid=82&id=2095
21 Ministry of Sports and Youth Affairs and United Nations Development Program (2012). *National Youth Aspirations Research Report.* Armenia.
22 World Development Indicators. (2019). Retrieved from http://databank.worldbank.org/data/source/world-development-indicators
23 Indicators of learning poverty and minimum proficiency levels (MPL) were developed by the Global Alliance to Monitor Learning led by the UNESCO Institute for Statistics (UIS).
24 The Assessment and Testing Center of Armenia (2015). Retrieved from http://www.atc.am
25 Schwab, K. (2018). *Global Competitiveness Report.* World Economic Forum 2019. Retrieved from https://www.weforum.org/reports/the-global-competitveness-report-2018
26 Strong Primary Health Care Saves Lives (PHCPI). (2019). Retrieved from https://improvingphc.org/europe-central-asia/armenia
27 Davtyan, N., A. Bazarchyan, and A. Agazaryan (2018). National Health Accounts: Armenia. National Institute of Health after S. Avdalbekyan, RA MoH.
28 World Health Organization. (2019). Outpatient contacts per person per year. Retrieved from https://gateway.euro.who.int/en/indicators/hfa_543-6300-outpatient-contacts-per-person-per-year/
29 Integrated Living Conditions Survey (2017). Statistical Committee of the Republic of Armenia. Retrieved from https://www.armstat.am/en/?nid=205
30 Farrington, J., A. Kontsevaya, D. Fediaev, D. Grafton, H. Khachatryan, A. Schmit, et al (2019). "Prevention and control of noncommunicable diseases in Armenia: the case for investment." World Health Organization.
31 The Institute for Health Metrics and Evaluation (IHME). (2019). Retrieved from http://www.healthdata.org/armenia
32 Statistical Committee of the Republic of Armenia (2018). *Social Snapshot and Poverty in Armenia.* Retrieved from https://www.armstat.am/en/?nid=82&id=2095
33 Integrated Living Conditions Survey. (2015). Statistical Committee of the Republic of Armenia. Retrieved from https://www.armstat.am/en/?nid=205
34 Statistical Committee of the Republic of Armenia (2016). *Social Snapshot and Poverty in Armenia.* Retrieved from https://www.armstat.am/en/?nid=80&id=1819
35 Aghazaryan, A. (2018). "Cost-benefit analysis of alternative preschool education services in consolidated multi-settlement communities of Armenia." UNICEF, Geneva. Retrieved from https://www.unicef.org/armenia/en/reports/cost-benefit-analysis-alternative-pre-school-education-services-armenia
36 Enterprise Incubator Foundation. (2014). I*T Skills Assessment in Armenia.* Prepared by EV Consulting.
37 Integrated Living Conditions Survey. (2017). Statistical Committee of the Republic of Armenia. Retrieved from https://www.armstat.am/en/?nid=205
38 Andreasyan, D., A. Bazarchyan, S. Manukyan, G. Muradyan, A. Torosyan, A. Chamanyan, L. Bidzyan, and P. ZelveyanP. *Armenia Health System Performance Assessment.* National Institute of Health named after academician S. Abdalbekyan, 2016.
39 World Bank Group; World Health Organization; Ministry of Finance, P.R.C.; National Health and Family Planning Commission, P.R.C.; Ministry of Human Resources and Social Security, P.R.C. (2016). *Deepening Health Reform in China : Building High-Quality and Value-Based Service Delivery.* World Bank, Washington, DC.
40 UNICEF (2015). *Evaluation of Family Support Services and Stakeholders Contribution to Related Services/Systems.* VISTAAPlus LLC (Armenia) and Mathematica Policy Research (U.S).
41 The World Bank was recently awarded a grant from the Japan Social Development Fund to support the MLSA to develop a social case management strategy and its operational guidelines.
42 Global Social Service Workforce Alliance. (2018). *The State of the Social Service Workforce.* Retrieved from http://www.socialserviceworkforce.org/system/files/resource/files/State-of-the-Social-Service-Workforce-2018-Report.pdf
43 Honorati, M., S.J. de Silva, C. Millan, and F. Kerschbaumer (2019). *Work for a better future in Armenia: an analysis of jobs dynamics.* Washington, DC: World Bank.
44 Jong-Wha, Lee (2019). *Lessons of East Asia's Human Capital Development.* https://www.project-syndicate.org/commentary/human-capital-east-asia-development-strategy-education-by-lee-jong-wha-2019-01.
Osman-Gani, AAhad M. (2004). "Human capital development in Singapore: An analysis of national policy perspectives." *Advances in developing human resources* 6.3: 276-287.
Schieber, George J. (1997). *Innovations in Health Care Financing: Proceedings of a World Bank conference*, March 10-11, 1997.
International Health Care System Profiles. https://international.commonwealthfund.org/countries/singapore/
45 Rossi, Federico (2018). "Human Capital and Macro-Economic Development: A Review of the Evidence," Policy Research Working Paper No. 8650, Washington: The World Bank Group.
46 Gatti, R. and A. Mohpal. (2019). Investing in Human Capital: What can we learn from the World Bank's portfolio data? World Bank Policy Research Paper No. 8716.
47 Farrington, J., A. Kontsevaya, D. Fediaev, D. Grafton, H. Khachatryan, and A. Schmit et al (2019). *Prevention and control of noncommunicable diseases in Armenia: the case for investment.* World Health Organization.