



Project Information Document/ Identification/Concept Stage (PID)

Concept Stage | Date Prepared/Updated: 20-Mar-2019 | Report No: PIDC178511



BASIC INFORMATION

A. Basic Project Data

Project ID	Parent Project ID (if any)	Environmental and Social Risk Classification	Project Name
P170001		Low	EU4Innovation STEM Project
Region	Country	Date PID Prepared	Estimated Date of Approval
EUROPE AND CENTRAL ASIA	Armenia	20-Mar-2019	
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Ministry of Education and Science	National Institute of Education	

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PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	2.99
Total Financing	2.99
Financing Gap	0.00

DETAILS

Non-World Bank Group Financing

Trust Funds	2.99
European Commission Development Fund - TF	2.99

B. Introduction and Context

Country Context

While Armenia reduced poverty in recent years, it has one of the highest poverty rates in ECA and performs poorly in boosting income growth among the bottom of the welfare distribution. The share of the population living below the national poverty line fell from 53.5 percent in 2004 to 29.4 percent in 2016[1]. Between 2010 and 2015, mean consumption of the bottom 40 percent grew at 3.4 percent, which was below the 4.3 percent growth for the overall population.[2] The transmission of growth to poverty has been low since 2010, a median performance in the region. To renew its inclusive growth, Armenia now faces the challenge of unleashing new growth and job creation drivers.



After stagnating in 2016, the economy performed strongly in 2017, and sustained recovery is expected in the medium term. Growth is estimated to have rebounded in 2017 to 6.7 percent with strong consumption and a moderate expansion of gross investment. The economy is expected to grow by about 4.2 percent in 2018. Improved tax administration and efficiency in current spending are expected to make room for stronger public capital spending. A positive external environment should facilitate exports of goods and services, supported also by improving firm productivity.

The expected sustained recovery scenario lends itself to various opportunities. The greatest opportunity comes from seizing the opportunity presented by the resumption of growth to accelerate the implementation of major structural reforms to: (i) open domestic markets to more competition, seize export opportunities and overcome connectivity and infrastructure constraints; (ii) develop the private sector, including by removing barriers to entry; (iii) remove disincentives to labor participation and improve labor productivity; and (iv) build national resilience, including on the macro-fiscal area.

Armenia’s development challenges include low human development indicators, regional and gender inequities, and demographic trends. Armenia is ranked 84st on the UN’s Human Development Index, which is below the ECA average and countries including Azerbaijan, Kazakhstan, and Belarus.[3] As nearly 30 percent of the rural population lives below the national poverty line, regional disparities need to be addressed if Armenia is to spread gains from development and reform. Gender equality outcomes in Armenia are broadly comparable with regional and income comparator groups, but areas remain inequalities persist, including in the areas of labor participation and earnings. [4] Lastly, the decline in Armenia’s working-age population adds to the sense of urgency to improve labor productivity and participation. [5]

The coming years provide a unique reform momentum to put Armenia on an accelerated path to reduced poverty and increased shared prosperity. This new reform momentum is supported by several factors, including the conclusion of the constitutional reform; the recent signing of the Comprehensive and Enhanced Partnership Agreement (CEPA) with the European Union (EU); a strong rebound in economic growth in 2017 combined with a positive economic outlook; and a renewed interest from the diaspora in engaging with economic development. In May 2018, a new government was installed after a “non-violent velvet revolution”.

[1] In 2015, 13.5% of the population lived below the World Bank lower middle-income class international poverty line of \$3.2 PPP 2011

[2] ECAPOV (World Bank database of harmonized consumption data). Consumption aggregate from national household survey ILCS.

[3] <http://hdr.undp.org/en/countries/profiles/ARM> (2016 data)



[4]<http://documents.worldbank.org/curated/en/250481491242159715/pdf/113990-WP-P157626-PUBLIC-Armenia-Gender-Assessment-2016.pdf>;

[5]
<http://hdr.undp.org/en/countries/profiles/ARM>; <http://documents.worldbank.org/curated/en/476801500273475872/pdf/117478-WP-P162262-PUBLIC-WBArmeniaEducationInternalStudyMay.pdf>;
<https://data.worldbank.org/indicator/SM.POP.NETM?locations=AM>;

Sectoral and Institutional Context

Private sector development and labor market outcomes

The Armenia Development Strategy (ADS) 2014-2025 identifies the development of Armenia into a knowledge-based economy as a priority. It highlights strengthening Armenia's competitive advantages based on science and technology as a condition for development.

Employers face difficulties in recruiting and retaining workers with the required skills, and see workforce skills as a major obstacle to their activities. Roughly a third to half of Armenian companies report difficulties in recruiting staff in occupations such as professionals, service workers, and technicians. Firms identified skills shortages as a major obstacle, including firms at the technological frontier who introduced new products, invested in R&D, and upgraded their existing products during the boom years in Armenia (World Bank, 2017). Insufficient quality of human capital is considered one of the main binding constraints to the country's growth. A majority of employers are dissatisfied with the quality of education, especially with the extent to which education provides practical skills and updated knowledge. In addition to occupation specific technical skills, which employers tend to value most, employers find that young workers particularly lack more generic skills related to problem solving, critical and creative thinking, team work, languages, and leadership (Rutkowski, J., 2013).

Alleviating skill constraints of Armenia's firms is crucial to boost productivity and competitiveness, particularly for growing sectors and firms with high value-added, such as the information technology (IT) and high-technology industry (World Bank, 2017a). For example, since 2006, the IT and high-technology sector has become one of the fastest growing sectors in the country. According to the 2014 IT Skills Assessment in Armenia Report, the demand for IT specialists is expected to continue at an estimated rate of 17 percent per year, and the current number and quality of graduates is not enough to meet industry demand (World Bank, 2014). The skills assessment of graduates in IT and Engineering by Enterprise Incubator Foundation revealed that 73 percent of firms find that the practical knowledge of the graduates is below expectations (World Bank, 2014).

Education sector



Overall the education sector has seen improvements but continues to present challenges. Attainments is high on average but biased toward the non-poor. School coverage has improved but issues of equity and quality persist, with rural students at a particular disadvantage. Teaching practices, instructional materials and textbooks are outdated and curricular goals are not closely aligned to modern labor market needs. Institutional capacity to guide change is limited.

The educational attainment of Armenia's population is high, especially among the non-poor and urban population. Access to general education is now near universal, with 91.6 percent net enrollment of the age cohort in general education in 2015 (World Bank, 2015). Over 20 percent of the working age non-poor have completed a university education, compared to 10 percent of the poor. Among the poor, 44 percent of the working age population completed upper-secondary education, and an additional 15 percent completed secondary-level vocational. Rural residents have the lowest educational attainment with only 9 percent having completed tertiary education, compared to 25 percent in Armenia's secondary cities and 31 percent in Yerevan (World Bank, 2017).

Teachers in rural areas of Armenia are less qualified than their urban peers and students are at disadvantages compared to their urban peers. Teachers in urban areas have higher levels of education than rural teachers (Price-Rom, 2016). According to an Open Society Institute report (Khachatryan et al, 2013), the overwhelming majority of Armenia's unqualified teachers (estimated to be around 4,000 out of a total of 38,690, equivalent to 10 percent) work in rural schools. Learning outcomes in rural areas lag those of urban areas: In mathematics, the average 12th grade exam score of students from big cities was 14.3 (out of 20), compared to 12.1 and 11.9 for students from border areas and remote villages, respectively. In the 9th grade, scores were 13.3 (large cities), 12.3 (border areas), and 12.5 (remote villages).[1] Results from the TIMSS assessment equally show higher mathematics and science performance of 4th and 8th grade students in larger settlements compared to those in smaller places, with observed difference being larger for 8th grade than for 4th grade students.[2]

Traditional lecture-based teaching and disconnected theoretical content are still prevalent in Armenian schools while student-centered 'active learning' is relatively rare. The Armenian teaching force is aging. 44% of Armenian school teachers were above 50 years in 2015 compared to 30% of the OECD average. Teachers lack continuous access to high-quality professional development. Learning of STEM subjects among others, is theoretical and disconnected. A shift towards using modern, student centered teaching approaches, which according to research shows to have a positive impact on students' motivation requires securing teachers' access for subject specific and continuous professional development (World Bank, 2017a).

The national curriculum of Armenia is fragmented, vague and overloaded. The national curriculum regulations and main documents are not harmonized and consistent. In numerous instances, links between the subject learning objectives, requirements to learners and subject core content in all levels of general education are not clear.[3] Curricula are overloaded with disconnected factual knowledge previously introduced and not updated or integrated with explicit learning goals. Where learning goals are included,



they are articulated vaguely and generally and in some cases are identical for lower and upper secondary school (e.g. in case with biology).

Institutional Capacity to Guide Change is limited. The role of National Institute of Education (NIE) in Armenia is vague and it currently functions like a service delivery institution, carrying out various activities which are defined by annual contracts with the Ministry of Education and Science. Several specialized institutions were created since early 2000 in the field of examination and accreditation, textbooks, and the establishment of these organisations is either limited or overlaps with the mandate and activities carried out by the NIE.

Because of these conditions, learning outcomes are low, especially for science. The 2011 TIMSS science and mathematics scores emphasize that the results of Armenian students are below average: 4th grade students' average scores in science were 416 in 4th grade and 437 in 8th grade. In mathematics, the average score in 4th grade was 452 and in 8th grade it was 467, all compared to an international average for both science and mathematics of 500.[4]

The World Bank support general education through the ongoing Education Improvement Project (EIP, P130182). This project, under implementation from 2014-2019, supports the review and improvement of the curricula and standards for all grades, extension of preschool coverage, improvement of the quality of general education and promotion of greater links between higher education institutions and the labor market. It is also supporting the National Center of Education Technology in strengthening its capacity to monitor Armenian schools, provide them with adequate ICT coverage and become a national center for educational statistics.

[1] Assessment and Testing Center, Statistical analysis of the 9th grade final exams (school-leaving exams) in 2015; Statistical analysis of the 12th grade final exams (school-leaving exams) in 2015.

[2] TIMSS 2011 International Results in Mathematics, p. 208-211)

[3] Study on Needs Assessment for the Revision of Curriculum, State and Subject Standards and Syllabi Within the Framework of Education Improvement Project, 2016.

[4] Source: TIMSS 2011 International Results in Mathematics, p. 38;40;
<https://files.eric.ed.gov/fulltext/ED544560.pdf>

Relationship to CPF

The proposed Project is well aligned with the World Bank's draft Country Partnership Framework (CPF) for the Republic of Armenia FY2018-2022. The proposed Project would directly respond to both CPF objectives under the draft CPS's Focus Area 2: Enhancing Human Capital and Equity. Specifically, it would both enhance



the quality and relevance of education, and improve access to economic opportunities for the poor and vulnerable.

This EU-financed activity is also in line with the EU Policy Framework. Economic development and market opportunities through enhancing human capital, including modernization of the education system to supply the labour market, is the first of four priority sectors for the EU's cooperation with Armenia. The review of the European Neighborhood Policy, (November 2015), confirmed that the EU will continue improving the employability of the local workforce. The programme is also in line with the 2016 Joint Staff Working Document on Eastern Partnership "Focusing on Key Priorities and Deliverables" that recognizes the need to enhance the quality and relevance of education in Eastern Partnership countries.

Proposed activities are also in line with the Armenia Development Strategy 2014-2025 (ADS), which views development of education and science as priorities. Sector priorities include improving the quality and effectiveness of education at all levels of the education system to international standards, and ensuring affordable and accessible education for all population groups. Key strategic objectives include improving the quality of education and bringing it to international standards, strengthening quality control of education, and improving efficiency and management of the education system. In science, the ADS aims to ensure sustainable development of science and advanced technologies. Upgrading scientific infrastructure, stable growth of highly qualified workforce in scientific and technical fields, attracting young scientists, strengthening innovation, and internationalizing science and innovation are among the key objectives of the ADS.[1]

[1] Armenia Development Strategy for 2014-2025. Annex to RA Government Decree #442-N, March 27, 2014.

C. Project Development Objective(s)

Proposed Development Objective(s)

The Project Development Objective is to increase the capacity of the National Institute of Education to formulate and manage key policies affecting general education quality and improve the learning environment for delivery of STEM education in selected regions.

Key Results

1. The NIE gains capacity to ensure quality assurance of professional development of teachers.
2. Pilot region's middle and high schools equipped with low-cost equipment to roll-out enhanced STEM equipment for enhanced teaching.



D. Preliminary Description

Activities/Components

Increasing capacity of the National Institute of Education (NIE) to better regulate policies affecting Professional Development of Teachers

Strengthening qualifications of general education teachers and introduction of modern, student-centered pedagogies is one of the key priorities of the government of Armenia. Institutional capacity to guide such change is currently limited. The National Institute of Education (NIE) is currently a sole-source provider of most of the state in-service teacher trainings in the country and functions like a service delivery institution, with limited capacity to form new policies for better regulation of teaching profession. The recommendations of the Functional Review carried out by EU[1] and the government's vision for reforms emphasize the need to strengthen capacity of NIE to carry out its mandate of regulating teaching profession, teacher training policies and teacher quality overall.

In the absence of a coherent policy framework for regulating the teaching profession, the proposed component would provide advisory services and technical assistance to raise capacity of NIE to develop and manage continuous professional development framework for teachers. This framework should be based on clear expectations set both for incumbent and existing teachers and will be a public statement of what constitutes teacher quality. The standards define the work of teachers and make explicit the elements of quality, effective teaching in 21st century schools that will improve educational outcomes for students. The standards do this by providing a framework which makes clear the knowledge, practice and professional engagement required from teachers. The development of teacher standards will be guided by international best practice, stakeholder consultations and alignment with the requirements set forth by the new curriculum.

This component will also support the government's strategy to outsource provision of teacher training to eligible training providers vis-à-vis current practice of NIE being the main provider for in-service teacher training in Armenia. The component will support setting standards for teacher training, defining requirements for the accreditation of teacher training providers and putting in place a proper quality assurance system to monitor quality and delivery of in-service teacher trainings.

The specific activities supported under this component, include, but may not be limited to:

- (a) **Strengthen the capacity for teacher professional development within NIE.** This activity entails targeted advisory support to guide development of teacher professional development framework, on the job training of core staff of the unit and opportunities for study tour to learn about best practices and innovations in teacher policies.
- (b) **Supporting setting up a quality assurance mechanism of teacher training.** This activity will support development of standards for the accreditation of in-service teacher training providers and will help to set up a proper quality assurance system to evaluate and monitor the quality and delivery of teacher trainings.



The sub-component could also provide support for the development of teacher professional and subject standards. The objective of the standards would be to set clear expectations both for incumbent and existing teachers in the system in terms of what constitutes quality teaching. This activity will also entail review of teacher standards in selected advanced countries to draw lessons relevant to Armenia.

Equipment and works for the regional pilot of new approaches to STEM teaching and learning

A regional pilot will be carried out under the Bank Executed Trust Fund with the aim to strengthen the implementation of student-centered teaching and learning in STEM subjects in selected middle and high schools, with the intention to generate lessons learned and experiences to facilitate a nationwide roll-out. The pilot will be designed, implemented and monitored via a Bank-executed ASA (P167562). This sub-component would support the purchase of hardware and material required for the successful roll-out of the STEM Pilot. The subcomponent will prioritize purchase of efficient and low-cost equipment for the pilot roll-out to allow replication of the same model country wide via government financing. The sub-component will also support minor works where necessary to install new equipment and ensure the needed safety.

Costing

Estimated project costs, financed by the EU, are USD 2.5 million, of which USD 0.8 million would be allocated to capacity building of the NIE, and USD 1.7 million to the purchase of equipment.

[1] Fartuşnic, C., Šiugždinienė, J. 2017. “Functional review of the national institute of education – Armenia.” Draft Report. European Union financed. Carried out by DADA6.

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Environmental and Social Standards Relevance

E. Relevant Standards

ESS Standards		Relevance
ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant
ESS 2	Labor and Working Conditions	Relevant
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4	Community Health and Safety	Not Currently Relevant
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant



ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8	Cultural Heritage	Not Currently Relevant
ESS 9	Financial Intermediaries	Not Currently Relevant

Legal Operational Policies

Safeguard Policies	Triggered	Explanation (Optional)
Projects on International Waterways OP 7.50	No	Project will not finance any activities that may have impact on or be impacted by international waterways
Projects in Disputed Areas OP 7.60	No	Project will not support any activities in the disputed areas

Summary of Screening of Environmental and Social Risks and Impacts

The project will finance delivery of technical assistance to NIE (Component I) and installation of STEM equipment in the school laboratories within the selected pilot region of Armenia (Component II). No tangible negative environmental and social impacts are expected from these interventions. If any occur, impacts will be local and of a minor scale. POM will be prepared (adapted from an ongoing Education Improvement project in Armenia) for the purposes of this project. It will include guidance for screening eligibility of the proposed activities, environmental and social overview of work designs, a brief stakeholder mapping and description of planned stakeholder engagement activities, a Labor Management Procedure, and GRM.

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