

ECONOMIC ANALYSIS

A. Context

1. Uzbekistan has a fast-growing workforce and significant unemployment—55.2% of the population is younger than 29 years of age. Growing annually at 1.7%–1.8%, only 74.3% of the labor force is economically active.¹ The lack of jobs has resulted in large labor migration outside Uzbekistan, with 2.0 million labor migrants (10.4% of the workforce) as of June 2020. As a result of the coronavirus disease (COVID-19) pandemic, the real gross domestic product (GDP) growth rate dropped to 0.2% in the first half of 2020.² During January–June 2020, 2.3 million people got unemployed, resulting in an unemployment rate of 13.2%.³ Youth and women’s unemployment are even higher: as of June 2020, one out of five young people (aged 16–30) were unemployed; and women’s unemployment rate reached 17.4%. The number of migrant workers in June 2020 was 232,000 lower than in the first quarter of 2020.⁴ The labor market pressure requires job creation, as well as effective interventions in skills development and employment services.

2. Skills shortages have been identified as a critical constraint for private sector growth and economic diversification. About 35% of firms reported that employee skills posed a “major” or “very severe” obstacle to growth, and industrial enterprises experienced the most difficulty in finding suitable skills (49% reported a lack of qualified specialists).⁵ Micro and small enterprises (MSEs), the biggest contributor to job creation,⁶ suffered from lost business because of lack of appropriate skills. According to a survey of employers, 20% of the MSEs reported that they were unable to invest, and 23% reported reduced business turnover because of a shortage of skills.⁷ Therefore, market-relevant skills need to be developed urgently.

B. Rationale for Investing in Skills Development

3. Market-responsive skills development will enable job creation to absorb the growing labor force, and help increase labor productivity. Various sectors are booming and increasing the need for skilled workers. However, skills development in the country is underdeveloped: (i) employment and workforce development services are yet to meet the needs of employers and job seekers; (ii) the quality and relevance of skills development is limited, given the lack of acquisition of competencies, outdated equipment, and limited collaboration with industry; and (iii) the sector governance and management is weak. The project aims to address these issues and targets the following priority trades for skills development: information and communication technology (ICT), construction, agrobusiness and food processing, textiles and garments, and machinery repair and maintenance. Human capital can be built during the downturn caused by COVID-19 to cater to the resuming market demand that should accompany economic recovery.

4. ICT presents high growth (not less than 8% annually during 2013–2019) and high income opportunities (the average salaries are almost twice the salaries in large enterprises and the

¹ State Committee of the Republic of Uzbekistan on Statistics, 2020.

² International Monetary Fund. [Policy Responses to COVID-19: Uzbekistan—Key Policy Responses as of 27 August 2020](#).

³ The unemployment rate was reported to be 9.3% in 2018 and 9.0% in 2019 by the Ministry of Employment and Labor Relations (MOELR) of the Republic of Uzbekistan.

⁴ MOELR, August 2020.

⁵ M. Ajwad et al. 2014. [The Skills Road: Skills for Employability in Uzbekistan](#). Washington, DC: World Bank.

⁶ MSEs contributed to 80% of jobs created in 2016. United Nations Development Programme. 2018. [Unsustainable Employment in Uzbekistan: the Status, Problems, and Solutions](#). Tashkent.

⁷ The survey (2018) was supported by Asian Development Bank (ADB). 2016. [Technical Assistance to the Republic of Uzbekistan for Skills Strategies for Industrial Modernization and Inclusive Growth](#). Manila (TA 9256-UZB).

public sector).⁸ The Government of Uzbekistan is creating an enabling environment for ICT business such as the “Information Technology (IT) Park.” The ICT market demand is large and growing fast because of (i) the government’s digitalization of the public sector (e-government), education, and health services delivery; (ii) private sector enhancement, especially in wholesale and retail, agriculture (smart agriculture), energy, and manufacturing; and (iii) exports of ICT services—ICT companies from India and the Republic of Korea regard Uzbekistan as a hub for outsourcing services from member countries of the Commonwealth of Independent States.

5. The share of construction in GDP is 6%, and its annual growth rate in 2017–2019 was 11%–12%. The construction sector employed 1.24 million people during January–September 2019.⁹ Construction workers comprise a considerable share of labor migrants from Uzbekistan. The government has enacted beneficial policies and measures to enhance the construction sector, such as simplifying civil works permission procedures. It has continued implementing new tools to stimulate the sector, such as launching the mortgage development program.

6. Lack of land and water resources has driven Uzbekistan’s agribusiness and food processing sector to use new productive and efficient technologies. Enhancing greenhouses, especially hydroponics, has been one of the main trends. Such greenhouses generate value added per hectare five times higher than traditional open-field vegetable crops and create more jobs.¹⁰ Food processing used to be mostly centered on wheat (the production of flour and bread products). Since 2017, horticulture has grown rapidly. Although Uzbekistan has considerable horticulture production volumes, their storage and processing are underdeveloped. The government has a large program for developing horticulture storage, logistics, and processing. Demand for labor, especially mid-level technicians, will grow in this sector.

7. The textiles and garment sector is the largest non-extractive industry in the country. It is concentrated on the upstream part of the industry chain—spinning—although the garment segment is growing. This is reflected in the sector exports, whose value increased from \$875 million in 2015 to \$1.6 billion in 2019, with 56.9% on cotton yarn. The sector shows risk resilience: from January to July 2020, Uzbekistan’s textiles and garment exports increased by 8.1% compared with the same period of 2019, to \$833 million.¹¹ The government has issued the strategic plan of the Textile Sector Development Concept, which aims to reprocess all cotton yarns produced domestically by 2025, and increase the output of the textiles and garment sector 3.5 times from 2020 to 2025 and export 3.3 times over the same period (reaching \$7 billion in 2025). Implementation of this program is expected to create 35,000–60,000 new jobs.¹²

8. Demand for machinery and appliances services, maintenance and repair is expected to grow. Increased incomes and large investment programs have enhanced demand for both personal and commercial automobiles as well as appliances. And demand for maintenance and repair of automobiles is just beginning to increase. Agro-machinery maintenance and repair are also needed, along with the growth of the agribusiness and food processing sector. Home appliances repair has been a trade in which people may often pursue self-employment or small business start-ups.

⁸ State Committee of the Republic of Uzbekistan on Statistics, 2020; Ministry for Development of Information Technologies and Communications of the Republic of Uzbekistan, 2020.

⁹ State Committee of the Republic of Uzbekistan on Statistics, 2020.

¹⁰ World Bank. 2020. *Uzbekistan: Agri-Food Job Diagnostic*. Washington, DC.

¹¹ State Committee of the Republic of Uzbekistan on Statistics, 2018 and 2020.

¹² Presidential Resolution No. 10759.

C. The Project

9. The Skills Development for a Modern Economy Project will support improved availability of workers with market-relevant skills. The project is consistent with the government strategies. It supports 14 professional training centers (PTCs) and 6 technical and vocational educational institutions (TVEIs) with updated equipment and tools, reconstruction and renovation, competency-based training curricula, and modular training programs and materials.¹³ It will directly benefit at least 10,000 technical and vocational education and training (TVET) students; 48,000 job seekers (including 500 persons with disabilities); 600 specialized teachers and/or trainers; 1,200 public employment service (PES) staff; the management of PTCs, TVEIs, and PES centers; and government officials. It will also benefit the industries seeking skilled workers, other colleges seeking new training methods and materials, and people seeking recognition of prior learning. The training programs will promote female participation in nontraditional areas. The project will also finance activities that support improved management of and greater private sector collaboration in skills development in Uzbekistan.

D. Economic Analysis

10. **Economic cost-benefit analysis.** The economic analysis of this project follows the principles described in Asian Development Bank’s (ADB’s) Guidelines for the Economic Analysis of Projects.¹⁴ The project is expected to generate benefits through (i) increased enrollment in PTC and TVEI courses, (ii) enhanced quality and market relevance of training courses, and (iii) improved employability and higher earnings for PTC and TVEI graduates. Since the project’s targeted PTCs were transformed from TVEIs in 2019 and all TVEIs in the country have suspended enrolling new students since 2018, the project’s planned enrollment of PTC trainees and TVET students is deemed as a net increase in enrollment by comparing the with- and without-project scenarios.¹⁵ The incremental costs are (i) the project funding from the government and the ADB; (ii) the trainees’ and/or student’s private costs (foregone incomes and out-of-pocket expenses), including (a) household expenses, such as transportation to/from the training location and meals;¹⁶ and (b) opportunity costs (earnings foregone by PTC trainees and *technikum* (technical college) students during the training period);¹⁷ and (iii) recurrent costs for providing training at the PTCs and TVEIs, including (a) new teachers’ payrolls; (b) consumables, and operation and maintenance costs; and (c) periodic capital expenditures for renewing or replacing equipment. Table 1 summarizes the key assumptions for the with- and without-project comparisons.

Table 1: Key Assumptions for With- and Without-Project Comparisons

Indicator	Without the Project	With the Project
Enrollment of trainees in the targeted PTCs	0 ^a	12,000 per year ^b
Average duration of PTC training programs		4.5 months ^c
Completion rate of PTC trainees		90%
Employment rate of PTC graduates within 6 months ^d	40.0%	51.5%
Number of specialized PTC teachers in service in related fields	Almost 0 ^e	470
Enrollment of students in the targeted TVEIs	0 ^a	2,500 per year ^b

¹³ The six TVEIs include three professional schools enrolling Grade 9 general education graduates, and three *technikums* (technical colleges) enrolling Grade 11 general education graduates.

¹⁴ ADB. 2017. [Guidelines for the Economic Analysis of Projects](#). Manila.

¹⁵ Following Uzbekistan’s recent expansion of public general education from Grade 9 to 11, TVET sector reform was initiated in 2017 and it suspended the enrollment of new students from the academic year 2018/19.

¹⁶ For PTC trainees and professional school students, the government will provide stipends. For professional school students, the government will also provide free meals. These are considered as their “out-of-pocket” expenditures.

¹⁷ Professional school students are not assumed to have foregone earnings, as the country requires 11-year compulsory education. If they are not in professional schools, youth aged 16–18 should study in general schools for Grades 10–11 (which are free).

Indicator	Without the Project	With the Project
Average duration of TVEI training programs		2 years
Completion rate of TVEI students		85%
Employment rate of TVEI graduates within 6 months (in trained fields)	42%	46%
Number of specialized TVEI teachers in service in related fields	Almost 0 ^e	130

PTC = professional training center, TVEI = technical and vocational educational institution, TVET = technical and vocational education and training.

^a All TVEIs have suspended enrollment since 2018 under the TVET sector reform (the project PTCs are being transformed from TVEIs).

^b Operational after equipment installation. Disaggregation by occupation and trade is in project administration manual.

^c The PTC training programs will vary from 3 to 12 months, depending on the trade and the modules of training.

^d Without the project, the PTC trainees would be unemployed job seekers, who might get access to the public employment service. The Ministry of Employment and Labor Relations reported that about 40% of unemployed job seekers receiving public employment service found a job, while 60% of them were referred to the public works program or obtained unemployment benefits. As the project PTCs were TVEIs, the with-project employment rate of PTC graduates is assumed equivalent to the rate of TVEI graduates who get employed or enrolled in universities.

^e During the TVET sector reform, most teachers' service contracts were ended and very few teachers remain in service. Those remaining in service are often not specialized teachers in the project related fields.

Source: Asian Development Bank estimates.

11. The return on skills development is measured through the increase in the earnings of a successful trainee relative to their earnings without the project. There are two benefit streams—quantitative and qualitative. The quantitative stream is related to the increase in the number of people being trained and then employed. It is calculated by comparing between the with- and without-project scenarios. Without the project, an unemployed job seeker could receive unemployment benefit or be involved in a public works program to earn temporary wages. With the project, after training, they could find a job earning wages as an unskilled worker in the target trade. The qualitative stream is related to the wage premium a successful trainee, who becomes skilled, will earn compared with an unskilled worker in the target occupation of the target trade. The data on the difference in the average monthly earnings between the unskilled and skilled workforce were collected from a number of sources.¹⁸ The general assumptions are as follows: (i) an exchange rate of \$1 = SUM10,195 is used, based on the average weekly exchange rates fixed by the Central Bank of Uzbekistan in July 2020; (ii) all prices are valued in the domestic price numeraire at 2020 constant prices and income levels; (iii) price contingencies and interest are excluded from calculating the economic internal rate of return (EIRR), while physical contingencies are included as they represent the monetary value of additional real resources that may be required beyond the base cost to complete the project; (iv) taxes and duties are excluded because they represent transfer payments; (v) economic prices of project costs are estimated by converting the financial prices with a shadow exchange rate factor of 1.1 for traded goods and services and 1.0 for nontraded goods and works, as well as a shadow wage rate factor of 1.0 for skilled labor and 0.88 for unskilled labor;¹⁹ (vi) a 9% economic discount rate is used; and (vii) the economic life of the project is assumed to be 20 years.

¹⁸ These include data from the State Committee of the Republic of Uzbekistan on Statistics on average salaries in the target trades; job advertisements containing earnings information in targeted specialties on the website of the Ministry of Employment and Labor Relations; sector earnings reviews (in the textiles and garment sector and the ICT sector); and consultative meetings and questionnaires with sector specialists, trade associations, and employers. For the economic internal rate of return (EIRR) analysis, it is assumed that a PTC graduate would obtain 65% of the average premium if they successfully find a job, while a professional school graduate or a *technikum* (technical college) graduate could obtain 80% or 100% of the average premium, respectively. The assumption is based on their educational and targeted skills levels and the country's low access to tertiary education.

¹⁹ ADB. 2020. [Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Uzbekistan for the Sustainable Solid-Waste Management Project](#). Economic Analysis (accessible from the list of linked documents in Appendix 2). Manila.

12. Based on the incremental benefit and cost streams, the net present value of the project is estimated at SUM510.1 billion (\$50.0 million given the exchange rate on 15 July 2020), with an EIRR at 13.2% (Table 2). The EIRR is likely to be higher, if we consider positive externalities and long-term intergenerational social benefits with better skills, all of which are difficult to quantify.

Table 2: Base Case Economic Internal Rate of Return (\$ million)

Year	Incremental Costs			Incremental Benefits			Net Incremental Benefits	PV
	Capital and Recurrent Costs	Out-of-Pocket and Opportunity Costs	Total	From Increased Number of Graduates	From Wage Premium	Total		
2021	16.3		16.3				(16.3)	(14.9)
2022	23.9		23.9				(23.9)	(20.1)
2023	33.4	5.6	39.0	6.4	1.7	8.1	(30.9)	(23.8)
2024	40.6	6.1	46.7	6.4	5.7	12.1	(34.6)	(24.5)
2025	20.0	7.2	27.2	6.9	9.6	16.5	(10.7)	(6.9)
2026	16.1	7.2	23.3	6.9	14.4	21.3	(2.0)	(1.2)
2027	8.9	7.2	16.1	6.9	19.2	26.1	10.0	5.5
2028	18.4	7.2	25.6	6.9	23.9	30.8	5.2	2.6
2029	11.9	7.2	19.1	6.9	28.7	35.6	16.5	7.6
2030	11.9	7.2	19.1	6.9	33.5	40.4	21.3	9.0
2031–2040	143.2	71.9	215.1	69.3	619.3	688.6	473.5	116.9
							NPV	50.0
							EIRR	13.2%

() = negative, EIRR = economic internal rate of return, NPV = net present value, PV = present value.

Source: Asian Development Bank estimates.

13. **Sensitivity analysis.** A sensitivity analysis was done to test how robust the EIRR is to changes, including overruns in project investment and post-project costs, lower wage premiums and employability, and reduced enrollment. The analysis shows that a cost overrun during project implementation would have a small negative influence on the EIRR: a 10% increase in the project investment cost decreases the EIRR from the base case of 13.2% to 12.1%. After the project implementation period, any cost increase has an insignificant impact because of the small present value. Reduced enrollment also has a limited impact. However, the post-training wage premiums are more influential: a 5% (10%) decrease in the expected premiums makes the EIRR drop by 2.9 (3.7) percentage points. Lower employability of training graduates may also have a considerable impact: reducing the employment rate (within 6 months of graduation) by 10 percentage points decreases the EIRR by 4.7 percentage points. This shows the importance of high-quality market-relevant training in increasing productivity and demand for labor. The project should stress quality assurance and industrial partnership for effective skills development for employability to ensure the economic soundness of the investment. The resulting EIRRs in all scenarios are still higher than 6%, ADB's hurdle rate for social sector investment projects.

Table 3: Sensitivity Analysis of the Economic Internal Rate of Return

Scenario		Project Investment Cost Increase (%)		Post-Project Costs Increase (Recurrent and Periodic Capital) (%)		
		0%	+5%	+10%	+5%	+10%
Reduced wage premium upon employment	0%	13.2	12.6	12.1	13.0	12.7
	-5%	10.3	9.8	9.2	10.0	9.7
	-10%	9.6	9.0	8.5	9.3	9.0
Reduced enrollment	-5 p.p.	12.4	11.8	11.3	12.1	11.9
	-10 p.p.	11.5	11.0	10.5	11.3	11.0
Reduced employment rate	-5 p.p.	11.0	10.4	9.9	10.7	10.4
	-10 p.p.	8.5	8.0	7.6	8.2	7.9

p.p = percentage points.

Source: Asian Development Bank estimates.