



Country report Tajikistan

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Acronyms

2G-5G	Second-Fifth generations mobile network or service
4G/LTE	Fourth generation mobile network or service
ADB	Asian Development Bank
AE	Adult Education
AEC	Adult Educational Center
AEAT	Adult Education Association of Tajikistan
AI	Artificial Intelligence
ALE	Adult learning and education
ATCT	Adult Training Center of Tajikistan
CIS	Commonwealth of Independent States
COVID	corona virus disease
CVET	Continuing vocational education and training
DVV International	Institute for International Cooperation of the German Adult Education Association
EU	European Union
GDP	Gross Domestic Product
GSE	General Secondary Education
GSMA	Global System for Mobile-communications Alliance
GoT	Government of Tajikistan
HDI	Human Development Index
ICT	Information and Communication Technologies
IoT	Internet of things
IOM	International organization of migration
ISP	Internet service provider
IVET	Initial Vocational education and training
km ²	square kilometer
Kbps	Kilobits per second
LLL	Lifelong Learning
LMIC	Low-to-Middle-Income Country
Mbps	megabits per second
MoC	Ministry of Communications
MoE	Ministry of Education and Science.
MoL	Ministry of Labour, Migration and Employment
Moi	Ministry of Industry
NDS	National Development Strategy
NFE	Non-Formal Education
NQF	National qualification framework
NGO	Non-Governmental Organisation
NSED	National Strategy for Education Development

OJSC	open joint-stock company
PC	Personal computer
PwD	Person(s) with Disabilities
R&D	Research and Development
RSPIV	Rectangular Strategy Phase IV
RVA	Recognition, Validation and Accreditation
SCG	Single communication gateway
SDG	Sustainable Development Goal
SMEs	Small and medium enterprises
Solar PV	solar photovoltaic
SVET	Secondary Vocational Education and trainings
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Emergency Fund
USSR	Union of Soviet Socialist Republics
VET	Vocational Education and Training
VTL	Vocational technical Lyceum
WB	World Bank

1 Introduction

This country report represents a part of the study *Analysis of Digitalization in ALE in Asia: Risks and Challenges for Reaching out to Marginalised Groups* assignment carried out by the expert team of IMACON - ERUDIO for DVV International. The purpose of the study is to explore the current situation and the role digital formats can play in adult learning and education (ALE) in Asia, specifically in Cambodia, Tajikistan and Palestine. The following country report focuses on the digital landscape, needs, demands and trends in Tajikistan.

The country report is divided into nine chapters. Following the introductory section describing the methodology, the subsequent chapter 3 provides a concise overview of the general socio-economic context (3.1), demographics and marginalised people in Tajikistan (3.3), as well as of its education system (3.3). The chapter 4 presents an introduction and the specific context of adult learning and education in Tajikistan (4.2). The chapter 5 summarizes key information and data available in relation to digitalization including its possibilities, limitations and challenges. The chapter 6 focuses on stakeholders' expectations and views and presents the qualitative findings of the study. The final three sections include recommendations drawn from the findings (chapter 7), relevant annexes (8) and literature sources used (9).

2 Methodology

For the purpose of this country report, the expert team understands **digitalization** as an opportunity to affect **education** and learning of pupils, students as well as adults in a positive way which directly or indirectly improves their **socio-economic situation** as a result. Socioeconomic context, Education and Digitalization are considered as three pillars of the analysis. These above-mentioned pillars form the baseline for the quantitative as well as qualitative analysis and are explored in detail in the subsequent chapters. The following methods of data collection were used:

- **desk research** – the author examined an extensive list of national and international documents (studies, research papers, reports and statistics) that include information and data about socio-economic, education and digital situation in Tajikistan. In addition to that, a number of Tajikistan's strategic materials was studied as well as thematic publications related to the implementation of sustainable development goals. The full list of resources can be found in chapter 9.
- **distant field research** – to supplement the secondary data gathered through the desk research, the author in August-October 2021 conducted 11 online interviews with key informants – ALE providers, NGOs representing ALE beneficiaries, policymakers and experts. The interview participants are listed in the Annex 1. The topics and issues explored (as defined in the Inception report) are presented in the Annex 2.

- **synthesis** – all information and data collected through the desk and field research were synthesised. This forms the baseline for recommendations for promoting digital ALE addressing the needs of the learners in Tajikistan.

Throughout the study preparation, the author communicated with DVV International's Country Director for Tajikistan Ms. Zarina Khalikova. She has been invaluable in identifying and communicating with relevant respondents for individual interviews.

3 Context

3.1 General socio-economic context

Tajikistan gained its independence after the collapse of the Soviet Union in 1991, being the poorest republic of all the former USSR, burdened with a rundown infrastructure, crumbling health and education systems, and weak public institutions. Geographical location in the center of the Central Asia, with no seaports, with mostly mountainous territory (as much as 93% of the country is covered by mountains and up to 97% of the remaining arable land is an area with soil degradation)¹ and a high exposure to natural disasters (floods, droughts, avalanches, landslides), soil erosion, loss of biodiversity etc. influence both food security (especially during the winter season) as well as the infrastructure and households' incomes². As a result, Tajikistan imports approximately 70% of its food.

The consequences of the 1992- 1997 civil war between regional political fractions and later armed conflicts involving government forces were destructive for an already weak economic infrastructure, industrial and agricultural production, and likewise education sphere³. A centralized state-led approach to economic management accompanied by weak conditions for private sectors⁴, poor business climate for attracting foreign investments, feeble reforms and privatizations in the economic sphere and prevalent corruption⁵ all contribute to retaining Tajikistan's economy still in a mediocre state and withhold the country's development, placing Tajikistan on 125th position in UNDP HDI (the lowest of all Central Asian countries).⁶

The country's economy is dominated by minerals extraction, metals processing and agriculture, with the cotton as the most significant crop. Many deposits of rare and precious metals have been discovered within the country, including zinc, lead,

¹ World Food Programme, <https://www.wfp.org/countries/tajikistan>

² Between 1992 and 2016, economic losses from natural hazards in Tajikistan exceeded \$1.8 billion and affected almost 7 million people, Assessment of Economic Impacts From Disasters Along Key Corridors, Final Report May 2021 World Bank

³ The civil war in Tajikistan led to destruction of schools and educational institutions, dislocation of students and teachers, decline of education quality, lowered education attainment and increased gendered differentiation in education attainment. Yakubova, Muhabbat Makhbudovna, Education System of Tajikistan during the Civil War: Student Perspectives of Hardships, 2014 available at: <https://library.ndsu.edu/ir/handle/10365/27287?show=full>

⁴ In 2019, Tajikistan was ranked 106 out of 189 countries in the Ease of Doing Business report (an improvement from position 128 in 2016)

⁵ Corruption perception index – 25 in 2020

⁶ Human Development Report, <http://hdr.undp.org/en/data>

bismuth, molybdenum, wolfram, gold, silver, antimony, mercury, fluorspar, gas and oil⁷. Industry entails mainly small archaic factories in food processing and light industry, considerable hydropower facilities, and a large aluminum plant - currently operating well below its capacity⁸.

Low domestic productivity and wages at levels that leave most households exposed to (at least seasonal) poverty on one hand, and a lack of job opportunities on the other, motivated many Tajiks to work abroad, mostly in Russia (more than one million Tajik citizens work abroad - nearly 90% in Russia)⁹. The remittances constitute one third of the country's GDP (27.3% in 2021¹⁰). For example, according to the Russian Central Bank's statistics as much as \$2.54 billion was sent from Russia to Tajikistan in 2017¹¹. According to the World Bank, Tajikistan remains the most remittance-dependent country in the world. This dependence of Tajikistan's economy on the remittances had essentially negative consequences during the COVID-19 pandemic outbreak, when mobility was limited, and destination countries also faced problems. During the first six months of 2020, remittances decreased by nearly 15% (\$195 million) compared to the first six months of 2019. Restrictions on labour mobility and economic activity at home and abroad which resulted in fewer remittances, a weaker consumer demand, and reduced investments have had a significant impact on the Tajik economy.

On the other hand, it must be noted that in general Tajikistan has managed to improve economically over the last 20 years. In 2020, Gross Domestic Product (GDP) was estimated at \$8.19 billion¹², with GDP per capita at \$859. Real GDP growth has averaged around 7% in recent years, prior to the COVID-19 restrictions (in 2020 – 4.5%). A considerable progress has been made particularly in the country's major problem – the poverty level. Extreme poverty, measured by the international poverty line of \$1.90 per day, fell markedly - from 54% in 1999 to 5% in 2015. According to the GoT's own calculations, using a national poverty line, poverty declined, from 82% in 1999 to 29% in 2017.

However, it is evident that structural economic changes are needed in order to overcome a permanent trade deficit, substantial dependence on remittances, a frail financial sector, limited internal labour mobility, slow process of new job creation and little possibility for employment¹³.

In 2016, the Government of the Republic of Tajikistan has adopted the National Development Strategy (NDS) 2016 - 2030 focusing on the following key objectives: (i) ensure energy security; (ii) develop the country's communication opportunities; (iii)

⁷ Agency on Statistics under the President of the Republic of Tajikistan, <https://stat.tj/>

⁸ Moody's Analytics, Tajikistan Economic Indicators, <https://www.economy.com/tajikistan/indicators>

⁹ Moody's Analytics, Tajikistan Economic Indicators, <https://www.economy.com/tajikistan/indicators>

¹⁰ <http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data>

¹¹ International Labour Organization, Decent Work Country Programme of the Republic of Tajikistan 2020-2024 https://www.ilo.org/wcmsp5/groups/public/---ed_mas/---program/documents/genericdocument/wcms_774558.pdf

¹² The World Bank, Data: Tajikistan <https://data.worldbank.org/country/tajikistan>

¹³ The World Bank, Tajikistan Socio-Economic Resilience Strengthening Program Project Appraisal Document, May 30, 2019

ensure food security and nutrition; and (iv) increase productive employment¹⁴. The latter is aimed both to increase the quantity of created jobs and to improve their quality, through improving labour productivity and expanding access to social protection. The NDS targeted on the 50% poverty rate reduction by 2030 as well as on growth of the middle class in the country. These critical goals would be achieved by ongoing reforms in agriculture; increasing efficiency and productivity in both land and water resource use; reforming education, health and social protection systems; rehabilitating rural social and economic infrastructure; supporting productive SMEs and entrepreneurs; promoting gender equality; and providing social protection and support to the poorest citizens¹⁵. As will be discussed in more detail below, ALE is not explicitly described as a priority.

After its economy growing intensely over the last 20 years, Tajikistan entered recession in 2020. In 2021 it is expected to return to a growth rate of a pre-crisis level. Travel restrictions have affected transport services. Moreover, with the recession in Russia, many Tajiks who worked there have returned to Tajikistan. Remittances (25% of GDP in 2019) fell by 15% year-on-year in the first half of 2020, and the number of Tajiks leaving the country to work abroad has halved. Adding in the increase in poverty and unemployment due to the rigid labour market, private consumption and services (47% of GDP) were both severely affected. Different sources provided different figures for private consumption percentage to GDP - Coface's country study indicates 109% of GDP in 2019, other sources point to different figures: 76% in 2019 (and 85% in 2020) according ceicdata.com and 87% in 2019 (and 96% in 2020) according data.worldbank.org. Tajikistan's recession was also due to the slowdown in China, its main export market, as well as to the drop in the prices and demand for aluminum (17% of exports) and cotton (10%)¹⁶.

The World Bank Economic Update from summer 2021 pointed out that Tajikistan's economy has been experiencing a fast recovery from the COVID-19 pandemic. According to official estimates, real GDP has grown by 8.7% year over year in the first half of 2021 after growth had slowed to 4.5% in 2020. Tajikistan achieved higher economic growth through an increase in the export of precious metals and a considerable increase in domestic demand. In addition, the gradual opening of air traffic with Russia stimulated the inflow of migrant remittances and supported the recovery of household consumption. The economy remains highly vulnerable to changes in remittances that support the population's consumption and finance huge import bills. Limited domestic production and high dependence on imports make the country vulnerable to external price fluctuation, especially of fuel and food products.

¹⁴ Report on Situation in the Labour Market in the Republic of Tajikistan, Agency on Statistics under the President of Tajikistan, 2018

¹⁵ As far as the LLL is concerned the NDS 2016-2030 enumerates as one of the key areas of activity: „Organizing a system of supplementary vocational education, retraining and professional development for all age groups through the support of public-private partnership in the field of non-formal-education, funding professional development programs in the public sector, establishment of the body of educational consultants“.

¹⁶ <https://www.coface.com/Economic-Studies-and-Country-Risks/Tajikistan>, Last updated: February 2021

Escalation of geopolitical tensions in Afghanistan and the border dispute with the Kyrgyz Republic pose a security risk¹⁷.

3.2 Demographics and marginalised people in Tajikistan

The population of Tajikistan in 2020 was 9,537,642 persons, of which 2,623,424 persons lived in urban areas and 6,914,218 persons in rural areas¹⁸. The population density is 68 per km². 72% of country population is rural and 28% is urban. Rural areas are noticeably more prone to the hardships of life conditions, remaining significantly poorer than urban areas, with poverty and income insecurity drastically higher during winter and spring months¹⁹.

In the Republic of Tajikistan and in most CIS countries, an indicator of the total monthly consumption per capita is used as the main indicator for calculating the poverty level²⁰. According to the State Statistical Agency of the Republic of Tajikistan and the World Bank, the results of household budget surveys show a steady decline in the overall and extreme poverty in Tajikistan over the last years, amounting to 26.3% overall poverty and 10.7% of extreme poverty in 2019 at the national level. In 2018, the poverty rate was 27.4%, while the level of extreme (food) poverty was 11.8%. As compared to 2018, both overall poverty level and extreme (food) poverty level decreased by 1.1%.

¹⁷ <https://www.worldbank.org/en/country/tajikistan/publication/economic-update-summer-2021>

¹⁸ The World Bank, Data: Tajikistan <https://data.worldbank.org/country/tajikistan>

¹⁹ World Bank, Reducing Multi-Hazard Risks Across Tajikistan: Protecting Communities Through Quality Infrastructure (Washington, DC: World Bank, 2017)

²⁰ Agency on statistics under the President of the Republic of Tajikistan, Data integration – country report, Nov 2020, https://www.unescap.org/sites/default/files/Session1_Tajikistan_DI-CoP_WS_24-27Nov2020.pdf

Overall and Extreme Poverty Indicators in 2013-2019 (according to household budget surveys)

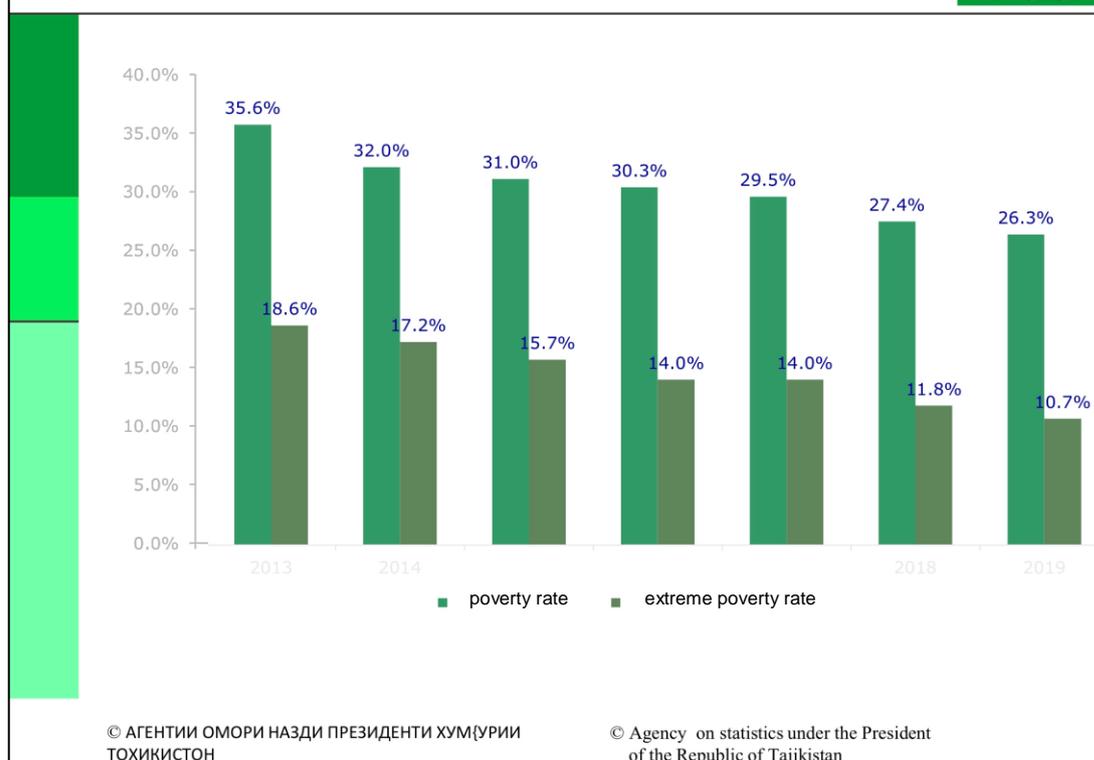


Figure 1. Overall and Extreme Poverty Indicators in 2013 - 2019 according to the household budget surveys²¹

Although its land for cultivation is rather limited, agriculture is the key economic sector²². Labour force is thus mostly engaged in agriculture (43%) and services (46.4%) and only slightly in industry (10.6%)²³. According to the World Bank data, labour force in 2020 amounted to 2,329,165 persons, among which 36.9% were women²⁴.

Tajikistan, encountering ongoing food-security challenges, large share of imported food, fluctuations in food prices disproportionately affecting the poorest people, has the highest rate of malnutrition in the Central Asia (despite lowering it over the past ten years)²⁵. From 30% to 56% of households (depending on the region), cannot afford a nutritious diet²⁶. Thus the population suffers from both vitamins and mineral deficiencies (for example more than 40% of women and children are affected by anaemia, more than 50% of women and children have iodine deficiency, more than

²¹ https://www.unescap.org/sites/default/files/Session1_Tajikistan_DI-CoP_WS_24-27Nov2020.pdf, page 6

²² Decent Work Country Programme of the Republic of Tajikistan 2020-2024

²³ <https://www.economy.com/tajikistan/indicators>

²⁴ <https://data.worldbank.org/>

²⁵ World Food Programme, Country Overview, <https://www.wfp.org/countries/tajikistan>

²⁶ World Food Programme, 'Fill the Nutrient Gap' 2018, <https://docs.wfp.org/api/documents/WFP-0000073380/download/?iframe>

47% of women and 37% of children have vitamin A shortage²⁷). Although there are some improvements (for example stunting among children aged under five fell from 27% in 2012 to 17% in 2017²⁸); however, this is not sufficient taking into account a yearly population growth. The health condition directly affects children and youth ability to study effectively.

Tajikistan has a large population growth rate (the one from 2019 to 2020 is 2.32%) and fertility rate is relatively high (3.61 births per woman). This - despite negative net migration each year - keeps the population young (the median age is 22.4 years). The population is anticipated to continue to increase at a relatively quick rate for the rest of the 21st century. According to current projections, it will reach 16.2 million by 2050. This growth is certainly a challenge to Tajikistan's economy and resources. The total population in Tajikistan was estimated at 9.3 million people in 2020, according to the latest census figures and projections from Trading Economics – see the diagram below. (Source: Trading Economics²⁹ based on data of Agency on Statistics, Tajikistan). This will also most probably affect education sector, already experiencing shortage of teachers, relevant facilities and sufficient financing. The government has implemented regulations in the past to encourage contraception which helped bring down the fertility rate³⁰. Fertility is related to women's education as well as household prosperity. For example, women with primary or no education have an average of 4.0 children, while women with higher education have an average 2.8 children. Women in the poorest households have one more child, on average, than women in the wealthiest households (4.0 versus 3.0)³¹. So, there is direct correlation here with education. It looks that AE providers may become an actor of the state efforts of the fertility rate regulation and, at the same time, bring up issue of rights based approach and women's rights.

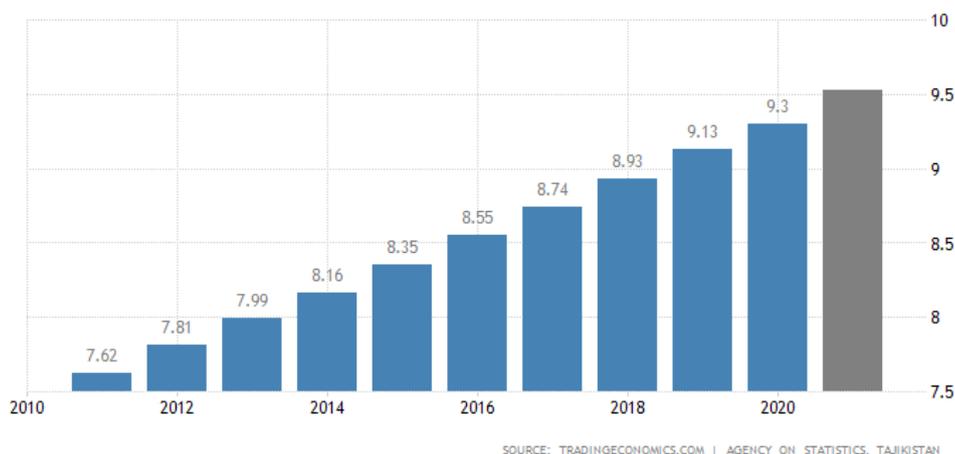


Figure 2. The total population in Tajikistan 2010-2020

²⁷ 2016 Micronutrient Survey <https://www.unicef.org/tajikistan/reports/national-nutrition-survey-tajikistan-2016>

²⁸ Tajikistan Demographic and Health Survey 2017, <https://microdata.worldbank.org/index.php/catalog/3394>

²⁹ <https://tradingeconomics.com/tajikistan/population>

³⁰ <https://worldpopulationreview.com/countries/tajikistan-population>

³¹ https://stat.wv.tj/library/ru/Tajikistan_KF_Oct-19.pdf

At present, Tajik households have an average of six members. One in five households (21% in 2017) is headed by a woman. 38% of Tajikistan's household population is under age 15. Women in Tajikistan have an average of 3.8 children³².

Throughout Tajikistan, **women** face discrimination and inequality in social, economic and political life. For example, the rate of women participating in the decisions about own health, major household purchase and visiting family³³ is only 33%, the adolescent fertility rate³⁴ per 1,000 women aged 15 - 19 is 58 and these women do not continue their education, which is not the case for men³⁵. Women also suffer disproportionately from poverty. The highest risk of poverty occurs in households headed by women, the uneducated heads or households with many children. The labour migration, where most of the emigrants are male (78% of whom are young men), contributes to the incidence of abandonments. Most of the migrants are married with children and support households with an average size of between seven and eight persons. Approximately one in three migrants' wives, over 150,000 young women, find themselves left alone and impoverished, entirely dependent on help from family, relatives, and friends. 70% of abandoned wives have children, and they are left to provide for their households despite their limited access to finance, social protection, education, or opportunities for employment³⁶. Abandonment is aggravated by negative social norms and traditional attitudes to women's status and rights within the family and society, limiting women's economic self-sufficiency, particularly in rural settings³⁷.

Tajikistan has the largest proportion of **youth** to adults among all post-Soviet republics. 41% of the country's population are under 18 and 66% are under 30 years of age, which makes the population the youngest in the Central Asia. Youth aged 15 – 24 face limited economic opportunities. According to the 2016 Labour Force Survey among youth in Tajikistan aged 15 – 24, 29.3%, or 435,621, were not in employment, education or training (NEET) (49.3% of Tajik women aged 15 to 24 were NEET, compared with 7% of the same age cohort of men). The country's population of those who are NEET is 88.4% female and 11.6% male. About one in six men and one in ten women aged 20 – 24 are too discouraged to look for work. From this data women are looks much more disadvantaged, but men more discouraged. The reason is that

³² 2017 Tajikistan. Demographic and Health Survey Key Findings, https://stat.ww.tj/library/ru/Tajikistan_KF_Oct-19.pdf

³³ Tajikistan Demographic and Health Survey 2012 and 2017 examined the degree of women's empowerment by asking women about three types of decisions: those related to their own health care, major household purchases, and visits to their family or relatives.

³⁴ The adolescent fertility rate is an indicator that is measured as a number of child births per 1000 women aged 15-19. Data source: <https://data.worldbank.org/indicator/SP.ADO.TFRT?view=map&locations=TJ>

³⁵ The data for male is absent for Tajikistan. However, comparing the indicator with other countries, it places Tajikistan together with Sudan on high position.

³⁶ <https://documents1.worldbank.org/curated/en/283841561341752653/pdf/Tajikistan-Socio-Economic-Resilience-Strengthening-Project.pdf>

³⁷ United Nations Women, <https://eca.unwomen.org/en/where-we-are/tajikistan>

young men are the ones who migrate to work abroad. "Migration from Tajikistan is male dominated: 92% of migrants are males of working age groups. Migrants are mostly married (71%) but are not heads of households (79%). Most of the migrants are sons and daughters of head of households"³⁸. The highest concentration of NEET population is in Dushanbe at 40.4%, followed by DRS at 36.1%, and GBAO at 30.4%³⁹.

More than 90% of Tajikistan's population is Muslim and the majority adheres to the Hanafi school of Sunni Islam. Approximately 4% of Muslims are Ismaili Shia, the majority of whom reside in the Gorno-Badakhshan Autonomous Region located in the eastern part of the country. Other religious minorities include Christians, Baha'is, members of the International Society of Krishna Consciousness and Jews⁴⁰. Tajikistan's Constitution declares the country a secular state and "religious associations shall be separate from the state and shall not interfere in state affairs"⁴¹. In recent years, violent extremism has been a growing concern in Tajikistan. Central Asians feature among foreign fighters in several conflict zones and among perpetrators of terrorist attacks elsewhere. According WB data (refers to an academic reasearch and data from the International Centre for Study of Radicalisation) Islamic State recruits from Tajikistan youth aged 22 – 28 years. Recent government figures indicate that 1,899 Tajik nationals have been recruited (earlier estimation was on the level of 1100). In the past eight years, the GoT has brought back around 3,400 young Tajik nationals who were pursuing their Islamic education abroad due to concerns over their radicalization⁴².

3.3 Formal education system in Tajikistan

In Tajikistan, free and compulsory general basic education is guaranteed in the Article 41 of Tajikistan's Constitution which states that *„Everyone shall have the right to education. The basic general education shall be compulsory. The state shall guarantee the free of charge general basic compulsory education in the state educational establishments. Everyone shall get free of charge general vocational, primary specialized, vocational specialized and higher specialized education in the state educational establishments, within the framework determined by law. Other forms of education shall be determined by law.“* In fact, there are reports that some parents are compelled to give bribes to enroll their children in school. Such payments, together with other costs (such as obligatory school uniforms and commuting to distantly located schools in rural areas) in reality create obstacles to poor families⁴³ in

³⁸ https://www.jica.go.jp/jica-ri/ja/publication/booksandreports/l75nbg000019cex3-att/report_20200604.pdf

³⁹ Center for Strategic Research under the President of Tajikistan and UNICEF. National Study on Adolescents and Youth: Assessments of Needs and Interests (Dushanbe: UNICEF, 2018)

⁴⁰ The U.S. Department of State "2018 Report on International Religious Freedom: Tajikistan"
<https://www.state.gov/reports/2018-report-on-international-religious-freedom/tajikistan/>

⁴¹ <https://www.state.gov/reports/2018-report-on-international-religious-freedom/tajikistan/> Section II. Status of Government Respect for Religious Freedom - Legal Framework.

⁴² <https://documents1.worldbank.org/curated/en/283841561341752653/pdf/Tajikistan-Socio-Economic-Resilience-Strengthening-Project.pdf>

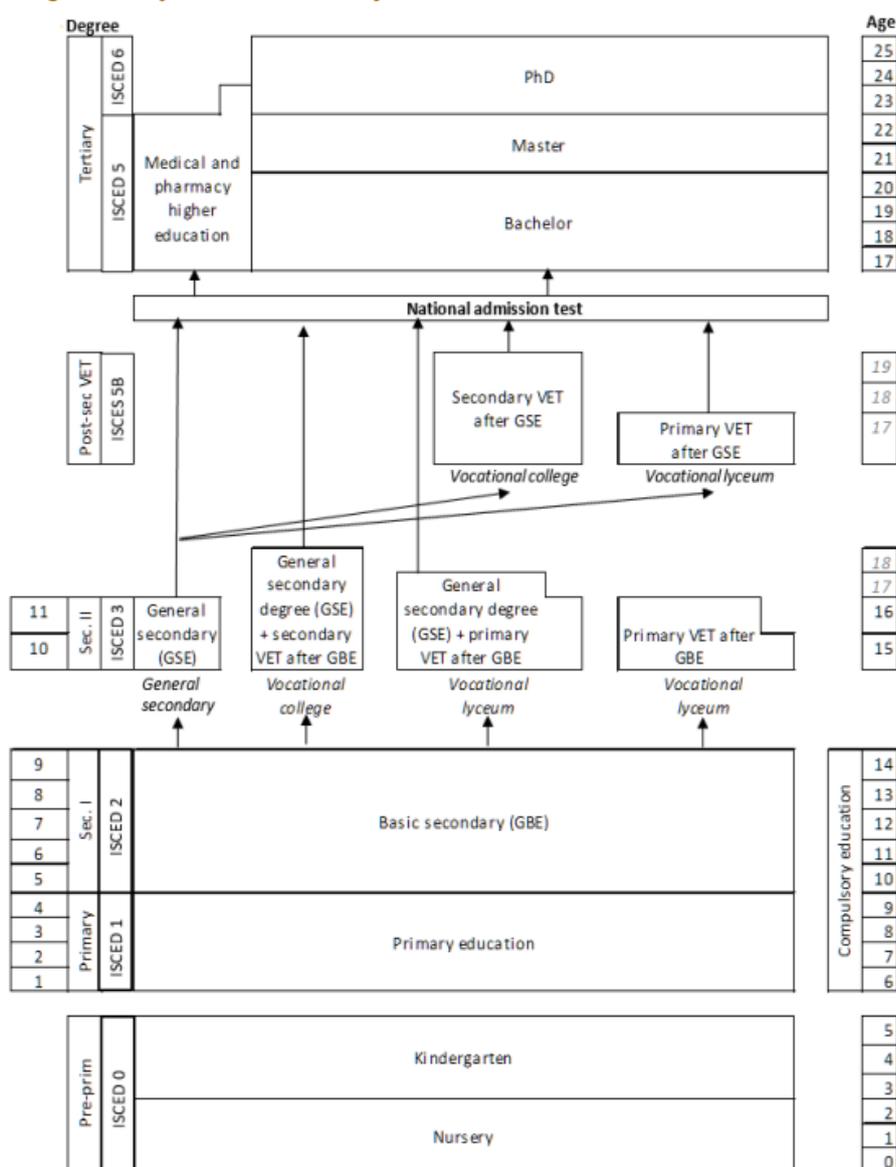
⁴³ <https://www.isdp.eu/losing-barriers-girls-education-tajikistan/>

access to education. In addition, the corruption is widespread, allowing to receive higher marks or get a university degree. At the same time the Ministry of Education and Science is ranked as the most corrupt governmental agency in Tajikistan⁴⁴.

The structure of formal education in the Republic of Tajikistan consists of several levels, from preschool through higher education, as well as continuing education and specialized education. Preschool education is one of the priority areas of the education sector. General basic education starts at the age of seven and lasts for nine years. At the age of 15, general secondary education and/or vocational education starts.

⁴⁴ <https://asiaplustj.info/en/news/tajikistan/laworder/20180215/anticorruption-agency-says-education-ministry-the-most-corrupt-governmental-agency-in-tajikistan>

Figure A1. Tajikistan's education system



Note: ISCED: International Standard Classification of Education

Figure 3. Tajikistan's education system⁴⁵

The Law on Education (Law No. 1004, 2013) guarantees the right to education for all, “regardless of nationality, race, sex, language, religion, political beliefs, and social and material provisions”.

While the official literacy rate in Tajikistan is 99.8%, the poor quality of education since 1991 has reduced the skill level of younger people⁴⁶. Although education is compulsory, many children fail to attend because of economic needs and security concerns in some regions. In 2017, pre-primary enrolment was less than 10% of eligible children, the lowest rate in the region. More than three in five children under

⁴⁵ https://www.etf.europa.eu/sites/default/files/2021-01/trp_2018-20_national_report_tajikistan.pdf

⁴⁶ <https://idea.usaid.gov/cd/tajikistan/education#tab-literacy>

the age of two receive little stimulation at home; four in five do not have books to read. Children with disabilities are the most marginalized group in the education system. In 2013, only 19% of children with disabilities aged 7 - 18 years attended mainstream schools. According to the information from the UNESCO Institute for Statistics, 1.9% of primary school aged children (7 - 10 years old) and 5.6% of lower secondary aged children (11 - 15 years old) were out of school; in lower secondary the figure was 9.1% for girls, compared to 2.4% for boys. This rate jumps drastically for students aged 15 - 16 (Grades 10 - 11), once enrolment is no longer mandatory. More girls are out of school than boys: only 64% of girls continue education from lower to upper secondary, as opposed to 86% of boys. This has consequences for girls' readiness for adult life and its demands. Investing in girls' education is crucial for societal development and it is the cornerstone for their empowerment and strengthening their participatory role in society⁴⁷.

In the last ten years, the education sector development has been governed and regulated by the National Development Strategy (NDS-2030) 2016 - 2030, National Strategy for Education Development (NSED) 2012 - 2020 and a number of corresponding medium-term implementation action plans and state programs.

Tajikistan's National Development Strategy 2030 (NDS-2030) presents its commitment to create a sustainable, prosperous, internationally connected, united and just society by 2030. NDS-2030 also shows its full commitment to implementing the 2030 Agenda for Sustainable Development (SDGs). The key targets include: reducing poverty rates by 50% and eliminating extreme poverty; significantly increasing spending on social welfare of the population; bringing the share of the middle class up to 50% of the population; and achieving transformational growth which enables a shift from dependency on agriculture towards greater complexity and diversification of the economy. The education sector is considered the driving force for bringing about these changes. However, the strategy also points out that access to education is hampered by insufficient increase in the number of preschool institutions, poor quality of school infrastructure in the regions, and meagre qualification of teachers. Other factors impeding the improvement in education are low attendance rates, inadequate access to improved sanitation and water supply in rural schools, and gender disparity at all levels of education. NDS-2030 articulates the following strategic priorities for education:

1. Ensuring equality and access to education;
2. Improving the quality of education at all levels;
3. Enhancing financial stability and efficiency in the education sector;
4. Establishment and development of national professional network of scientific and technical developments with emphasis on resource saving technologies in the context of labour surplus and a mountainous country.

The aforementioned National Strategy of Education Development of the Republic of Tajikistan (2012 - 2020) recognized the following priority directions: modernization of the education system (e.g., curriculum, pedagogy, special education, etc.), structural

⁴⁷ <https://www.unicef.org/tajikistan/access-education>

changes in the education system, including introduction of preschool education for children at the age of six, ensuring the accessibility of quality education⁴⁸.

Currently the new National Strategy for Education Development (NSED) for the 2021 - 2030 period is the country's main policy document in education⁴⁹. Its long-term goal is to create an effective education system that provides inclusive and equal opportunities and contributes to the development of abilities, intellectual development, employment, and improvement of the general well-being of the population. The strategy acknowledges that the quality of educational services in the country needs upgrading and admits that access to education remains problematic due to the following factors: the unsatisfactory growth in the number of preschool institutions, the poor quality of school infrastructure, and the relatively low qualifications of teachers. Apart from the barriers on the way to education outcomes improvement already mentioned in NDS there are also other mentioned such as physical, financial and cultural barriers to overcoming social exclusion⁵⁰.

Universal access to quality education (SDG4) remains a declarative priority for the country and its public resource allocation and reforms. At the same time, there is not easy to find evidences to prove this declaration through policy or budget allocation. GoT expenditure on education amounted to 5.7% of GDP in 2019, which is above the average education expenditure in low-income countries⁵¹. However, this allocation does not allow to invest to improvement of the educational quality. The national set of indicators to monitor progress in the implementation of SDGs has not been defined in specific sectors and it is difficult to verify the factual position of the country on its way to their attainment⁵². Lack of good governance also leading to restrictions to freedom of speech and to access to certain media channels is having negative effects on the potentials of digitalization for ALE.

4 Adult learning and education

4.1 Understanding of 'ALE concept' in Tajikistan

Adult Learning and Education (ALE) is a core component of lifelong learning (LLL). It comprises all forms of education and learning that aim to ensure that all adults can play their role in society and in the labour market. The term "adult" in the concept of ALE denotes all those who engage in ALE, even if they have not reached the legal age of maturity.

The current status and circumstances in the ALE policy framework for Tajikistan described in DVV policy brief: "LLL and ALE principles are thus laid down there, which if promoted could foster wider understanding and support for LLL as the context for

⁴⁸ <https://www.resources.norrag.org>

⁴⁹ National Strategy for Education Development of the Republic of Tajikistan for the period until 2030

<https://www.globalpartnership.org/sites/default/files/document/file/2020-12-tajikistan-education-sector-plan.pdf>

⁵⁰ <https://www.globalpartnership.org/where-we-work/tajikistan>

⁵¹ <https://data.worldbank.org/>

⁵² Mid-term Action Plan of National Strategy for Education Development 2021-2023, which is a national mechanism for SDG implementation is not available.

ALE [...]. A 2017 Law On Adult Education recognized the existence of formal, non-formal and informal education. It introduced the concept of validation, defined State guarantees for adults' access to education at all stages of life, and introduced norms for the mandatory collection of statistical data. Work has begun to develop a National Qualifications Framework (NQF), as an integral part of the system. In general, a favourable legal environment for ALE development is in place. The Concept of Continuous Education for 2017 - 2023 has been adopted. Here, ALE was given an important role for developing overall continuing education through adult training centers. [...] The Ministry of Labour, Migration and Employment (MoL) is responsible for managing ALE in Tajikistan, but this covers mostly vocational training for adults as the Ministry is responsible for promoting employment policy. Development of other ALE components is the responsibility of the Ministry of Education and Science (MoE) but is not included in its formal remit. In practice, the emphasis is on state educational institutions, and the entire education system is youth-oriented, not taking account of the needs of the adult population"⁵³.

4.2 Adult learning and education in Tajikistan

One of the features of Tajikistan's labour market is its labour surplus. After the collapse of the former Soviet Union, fundamental changes taking place in the economic and social sphere did not involve the education system, which did not adapt to occurring labour market needs. At the same time one of the leading aspects determining the labour market is the labour force development process. Taking into account limited territorial mobility and restricted access to higher professional education by poor people in Tajikistan, the importance of ALE is therefore crucial.

A system of adult education and training in Tajikistan was established in 2008, aiming to implement the principle of lifelong learning in the country's education system. A network of state-financed adult education centers - the ATCT system - has been developing upon the establishment of the Adult Training Center of Tajikistan (further in the report called NATC – National Adult Training Center - an important milestone in the provision of ALE in the country. Now these centers constitute a network with 34 branches⁵⁴ within the ATCT system and administer short-term training courses for working-age individuals.

ATCTs cover 19 sectors in 96 vocational specialties (e.g. economics, technology, transportation and equipment, electronic equipment/ installation, energetics, chemical industry, light industry, mining industry, architecture and construction, agriculture, metallurgy, telecommunication, tourism and hospitality, consumer services, and public catering). Their main target groups are returning migrants, vulnerable youth, especially women, and, to a lesser extent, adults with limited literacy skills. In 2019, ATCTs trained a total of 48,600 people, of whom 61.4% were women. ATCTs have mostly rundown facilities, a shortage of learning materials, and poorly qualified

⁵³ Duke, C.; Hinzen, H.; Sarrazin, R. (Ed.) (2021). Adult Learning and Education: Policy Brief Tajikistan. Bishkek: DVV International. https://www.dvv-international-central-asia.org/fileadmin/files/central-asia/images/images_kg/Publications/Media_data_2021_4/Policy_Briefs_on_ALE_in_Central_Asia_2021.pdf

⁵⁴ <https://kasb.tj/ru/aboutus>

instructors. Most ATCT trainees are identified and funded through a voucher system by the employment agency under the MoL and a substantial number of trainees pay for the training themselves. ATCTs were principally intended to provide basic vocational skills to marginalized social groups in order to improve their economic conditions.

ATCT and MoL in Tadjikistan are key actor for RVA (recognition, validation and accreditation) services. The key focus of the RVA system is validation of the competences of returning migrants. Currently, no actual functioning RVA system in place. Officially, RVA services can be offered by the entire ATCT system, following some regulations which have come in place since the AE Law was passed. However, this is currently not systematically done, as structures, staff and competencies are not yet in place. ATCTs now functioning as centers for validation for returning migrants. Nevertheless, certificates issued by ATCTs have low recognition by employers due to insufficient equipment and untransparent testing⁵⁵.

In Tajikistan there are several NGOs actively working to empower and develop the ALE sub-sector. Most of them are members of Adult Education Association of Tajikistan (AEAT). The AEAT initiators of the organization are German Adult Education Association (DVV International) in partnership with the Association of Scientific and Technical Intelligentsia (ASTI). The founders of AEAT were 13 organizations, which work in various areas of adult education. Currently, the members of the Association are 11 public organizations that carry out their activities in the field of socio-economic, political, legal education of all segments of the population, contributing to the development of civil society in the Republic of Tajikistan by promoting the growth of sustainable public organizations and bodies of public amateur performance through providing them with advisory, information and other educational services.

The term “adult education” found its place in the National Strategy for Education Development (NSED) 2012 - 2020, referring to the complex of progressive process of formal and other types of education which helps adults (for the purposes of education, this includes population aged 25 years and older) develop their abilities, enrich their knowledge and improve technical and professional skills or apply them in new areas to satisfy their society needs. ALE covers both formal and continuous education, informal education and a whole spectrum of informal and auxiliary education. Tajikistan’s Law on Education defined adult education as “a complex formation processes by which adults develop their abilities and knowledge, raise the level of professional and technical expertise, or choose a new direction”, but lacked a clear direction about government bodies responsible for it and strategies for improving it. The concept of continuing education included: the development of a competitive educational environment and with a variety of educational services; creation of infrastructures for continuing education; use of modern teaching technologies and new financial mechanisms.

⁵⁵ Technical and Vocational Education and Training in Tajikistan, March 2021, Asian Development Bank, <https://www.adb.org/sites/default/files/publication/691671/tvet-tajikistan-central-asia.pdf>

A new Law On Adult Education was introduced on 24 February 2017 (amended on 2 January 2018), which regulates public relations related to the system and management of adult education, organization of the educational process, scientific, methodological and personnel provision, as well as financial and economic activities and material and technical base in educational institutions for adult education⁵⁶. The Law recognizes the purpose of adult education defined as contributing to personal development through continuous improvement of professional competencies and increasing creative potential, meeting the needs of adults in terms of knowledge, skills and abilities, ability to adapt to a changing situation, skilled labour, moral development and personal growth. This law expands the country's concept of formal education, recognizing the right of adults to equal educational access at any point in their lives. According to the article 8 of the Law, the adult education system consists of the following structures:

- state education standard;
- classification of directions and specialties of vocational education;
- educational institutions for adult education;
- training programs;
- forms and norms of obtaining education;
- subjects of the process of education and upbringing in the field of adult education;
- adult education authorities.

5 Digitalization in Tajikistan

5.1 General context

For years Tajikistan's telecom sector continued to struggle due to geographic isolation, a lack of electricity, dysfunctional business climate, and impoverished population. Despite the launch of 4G/LTE services, Tajikistan has one of the lowest fixed-line penetrations in Asia and one of the lowest broadband levels in the world. With the participation of foreign investment, the mobile sector is near its saturation phase. There are also Russian loans and Chinese investment in the infrastructure through Economic Corridor initiatives. Only a few cities have 4G coverage. One of the minuses is that the government restricts political rights and civil liberties, controlling information through media interruptions. The government also raised rates on Internet-based calls and Internet services in 2020, making them ones of the highest in the world. The cost of the internet is high due to the monopoly of the national provider – public JSC “Tajiktelecom”, which is an obligatory intermediary for other local service providers. Fixed line availability has not changed significantly since 1998, while mobile cellular subscribership, aided by competition among multiple operators, has expanded rapidly⁵⁷. So, the previously fast developing digital infrastructure and service sector in

⁵⁶ http://ncz.tj/system/files/Legislation/1394_ru.pdf

⁵⁷ <https://www.businesswire.com/news/home/20191129005149/en/Tajikistan-Telecoms-Mobile-Broadband-Statistics-Analyses-Report>

the field of internet and telephone provision has recently been hampered by a tendency towards monopolization. This has caused the quality of services to go down.

In 2017, there were 479,000 fixed telephone lines in Tajikistan. Fixed telephone lines of Tajikistan increased from 237,600 in 2002 to 479,000 in 2017 growing at an average annual rate of 5.26%. Fixed telephone lines per 100 inhabitants of Tajikistan increased from 3.7 number per 100 inhabitants in 2002 to 5.4 number per 100 inhabitants in 2017 growing at an average annual rate of 2.86%. Also in 2017, mobile cellular subscriptions for Tajikistan amounted to 9.9 million, growing at an average annual rate of 83.62%. Mobile cellular subscriptions per 100 inhabitants of Tajikistan increased from 0.7 numbers per 100 inhabitants in 2003 to 111.5 numbers per 100 inhabitants in 2017, growing at an average annual rate of 79.84%. Analysing communications in general in 2019, it is visible that modern technologies helped bridge the gap of accessibility for the population living in rural areas with underdeveloped infrastructure. For example, in 2019 there were 471,090 total subscriptions for telephones (fixed lines), which equaled 5.39 subscriptions per 100 inhabitants (country's comparison to the world: 96)⁵⁸. At the same time, total subscriptions for mobile cellular telephones was 9,747,803, giving 111.53 subscriptions per 100 inhabitants (country's comparison to the world: 87).

The data for Tajikistan's share of households with Internet is available only for 2012 when it was 3.5 %. In 2017, there were 6,000 fixed broadband subscriptions in Tajikistan. Fixed broadband subscriptions of Tajikistan increased from 3,658 in 2008 to 6,000 in 2017 growing at an average annual rate of 5.82%. Total fixed (wired) broadband Internet subscriptions refer to subscriptions to high-speed access to the public Internet, at downstream speeds equal to, or greater than, 256 kbit/s. This may include, for example, a cable modem, DSL, fibre optics and other fixed (wired) broadband subscriptions. This value meant 0.1 fixed Internet subscriptions per 100 inhabitants. The growth over the last ten years had an average annual rate of 3.41%.

In 2010, mobile broadband subscriptions per 100 inhabitants for Tajikistan was 22.8 per 100 inhabitants. Between 2006 and 2010, mobile broadband subscriptions per 100 inhabitants of Tajikistan grew substantially from 6.2 to 22.8 per 100 inhabitants rising at an increasing annual rate that reached a maximum of 56.24% in 2007 and then decreased to 23.75% in 2010. This value relates to the number of subscriptions to mobile cellular networks with access to data communications (e.g. the Internet) at broadband downstream speeds (here defined as greater than or equal to 256 kbit/s). This refers to potential mobile broadband subscriptions and not active subscriptions.

In 2017 individuals using the Internet constituted 21.96% of the population⁵⁹. 27% of the households had Internet access at home. 21% of the households had a computer at home⁶⁰.

Data from January 2021 show that already 34.9% of the population were Internet users and 10.4% of the population were social media users. The annual digital growth

⁵⁸ <https://www.cia.gov/the-world-factbook/countries/tajikistan/#communications>

⁵⁹ <https://idea.usaid.gov/cd/tajikistan/information-and-communications-technology-ict>

⁶⁰ <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>

is very dynamic – comparing January 2021 versus January 2020, the growth in the number of Internet users totaled more than 39%, and the growth in the number of active social media users was even higher at 51%⁶¹.

In 2020, the number of secure Internet servers (using encryption technology in Internet transactions) for Tajikistan was 880. Secure Internet servers of Tajikistan increased from 6 in 2011 to 880 in 2020 growing at an average annual rate of 91.52%. This constituted 92.3 secure Internet servers per million people and increased from 0.8 per million people in 2011 to 92.3 per million people in 2020 growing at an average annual rate of 86.99%.⁶²

Internet speed in Tajikistan averaged 1,421.42 KBps from 2007 until 2017, reaching an all-time high of 4,925.39 KBps in the third quarter of 2016.⁶³ The actual Internet download speed for mobile Internet connections is 14.66 MBps (42% annual increase) and 33.55 MBps for fixed Internet connections (63% annual increase). The data show that the web traffic by device is growing among mobile phones users (56.7% with 15% annual increase) over laptop and desktop users (42.5% with 15% annual decrease)⁶⁴. 99% of social media users access them via mobile phones.

Currently, the ICT market in Tajikistan includes 11 Internet Service providers (ISPs), 6 mobile communication operators, and a number of content providers, web studios, domain name registrars and other ICT-oriented companies. All private ISPs and mobile operators are compelled to buy the Internet channels from the OJSC Tajiktelecom, a state-owned company that manages the Single Communications Gateway (SCG). Two dominating modes of access to the Internet are fiber-optic networks of ISPs and networks of mobile communications operators. The fiber-optic infrastructure is available in cities and most of the district centers. As a last mile solution all ISPs, which work in rural areas, use wireless technologies for the lack of the fiber-optic communications infrastructure⁶⁵. The private telecommunication industry is covering with its mobile communications over 95% of the inhabited territory of Tajikistan. However, rural areas are covered only by GSM communications format, while 3G and 4G (LTE) are available in large cities and most of the towns or district centers. Bearing in mind that about 70% of the population live in rural areas, about 35% of Internet users, are mostly urban inhabitants.

The GSMA Mobile Connectivity Index, which measures the performance of 170 countries, representing 99% of global population, scores Tajikistan with very low 41.71 points. The following spheres are assessed: infrastructure, affordability, consumer readiness, and content and services. A more detailed calculation of the index is presented in figure 4 below.

⁶¹ <https://datareportal.com/reports/digital-2021-tajikistan>

⁶² <https://knoema.com/atlas/Tajikistan/topics/Telecommunication>

⁶³ <https://tradingeconomics.com/tajikistan/internet-speed>

⁶⁴ <https://datareportal.com/reports/digital-2021-tajikistan>

⁶⁵ World Bank Group, *Research on the Digital Economy Readiness of Tajikistan*



Figure 4. GSMA Mobile Connectivity Index Score 2019⁶⁶

The GSMA Society Report 2021 *The State of Mobile Internet Connectivity 2021* states that while for the first time more than half of the world's population is using mobile Internet, the unconnected are more likely to be poorer, less educated, older, rural and women. While the gender gap in mobile Internet has continued to narrow, women in LMICs are still 15% less likely to use mobile Internet than men. People living in rural areas are also increasingly using mobile Internet, but a significant rural-urban gap persists. A lack of literacy and digital skills, as well as affordability, continue to be key barriers to the adoption of mobile Internet. Internet-enabled handsets and data became less affordable in many LMICs in 2020 due to the economic impact of the COVID-19 pandemic. Mobile Internet users have been using their mobile phones for a wider range of online activities and, in many cases, more frequently.⁶⁷

As shown in 'Technology and Innovation Report 2021. Catching technological waves. Innovation with equity' published by United Nations Conference on Trade and Development⁶⁸, Tajikistan has still a great deal of milestones to reach. The report presents the ranking of countries according to the Readiness for Frontier Technologies Index, where Tajikistan is on the 143rd position, classified in a group of Landlocked Developing Countries with a very low score of 0.10. Readiness for Frontier Technologies Index shows how the economies are prepared for an equitable deployment of frontier technologies and while only a few countries currently create frontier technologies, all countries need to prepare for them. To assess national capabilities to equitably use, adopt and adapt these technologies, the Technology and Innovation Report 2021 has developed a 'readiness index.' The index comprises five building blocks: ICT deployment, skills, R&D activity, industry activity and access to

⁶⁶ <https://www.mobileconnectivityindex.com/>

⁶⁷ <https://www.gsma.com/r/wp-content/uploads/2021/09/The-State-of-Mobile-Internet-Connectivity-Report-2021.pdf>

⁶⁸ https://unctad.org/system/files/official-document/tir2020_en.pdf

finance. The “frontier technologies” are a group of new technologies that take advantage of digitalization and connectivity which enable them to combine to multiply their impacts. This report covers 11 such technologies: artificial intelligence (AI), the Internet of Things (IoT), big data, blockchain, 5G, 3D printing, robotics, drones, gene editing, nanotechnology and solar photovoltaic (Solar PV). The low position of Tajikistan is determined by several other factors and a relatively low assessment for this country: in ICT ranking Tajikistan is on 148th position, skills ranking – 117th position, Research and Development (R&D) ranking – 133rd position, industry ranking – 119th position, finance ranking – 147th position. The overall assessment places Tajikistan even below the average score for the Least Developed Countries, which is 0.22.

Tajikistan is far behind other countries in the region in terms of e-governance and the use of ICT in public administration. In 2018, Tajikistan ranked on the 131st place in the e-government development index (0.422). Although many ministries, departments, and educational institutions have their own websites, they are often not updated, serve mainly as a business card, and do not exchange information with the public. The websites are not used for effective management⁶⁹. The most popular public e-services available to citizens of Tajikistan are services related to tax declaration submission, utility payments, Internet banking, mobile wallets, custom procedures, as well as the electronic receptions accessible on the websites of the government agencies; for foreigners the most popular e-service is the e-visa system.

5.2 Digitalization in education

Frontier technologies have huge potential for improving people’s lives, as it has already been proven during the COVID-19 pandemic, when AI and big data have been used for screening patients, monitoring the outbreaks or, tracking and tracing cases of the disease. Although technology is not a remedy to world problems such as poverty, hunger, climate change or inequalities in health or education, it may support various initiatives undertaken by societies to solve them. However, the technology needs to be used with caution, so as not to deepen the existing problems or create new gaps and conflicts.

The completely new challenge that the country’s VET system is now facing, is a response to the need for digital transformation of the country and to the **Concept of the Digital Economy** in the Republic of Tajikistan, which in general calls for ‘the assessment and development of human capital necessary for digital transformation’. As it is stated in the Concept during the first stage of the process, covering the period until 2025, there is a need for ‘training highly qualified personnel and management staff for inducing digital projects, as well as creating a system for training qualified personnel both at universities and in enterprises, and for developing digital skills among the general population’.⁷⁰

⁶⁹ Technical and Vocational Education and Training in Tajikistan, March 2021, Asian Development Bank, <https://www.adb.org/sites/default/files/publication/691671/tvet-tajikistan-central-asia.pdf>

⁷⁰ Concept of the Digital Economy in the Republic of Tajikistan / Government of the Republic of Tajikistan, Decree #642 from 12/30/2019

E-learning and Digital Skills Information and Communication Technology (ICT) and digital skills are also priorities in the National Development Strategy 2030. More than ten higher educational institutions are preparing ICT specialists, letting out 2,000 ICT graduates every year. Many TVET institutions offer basic ICT courses but only a few provide elaborated programs related to digital technologies such as computer numerical control, robotics, web design, drones, and the Internet of Things. Applying ICT into higher and secondary vocational education can enable more flexible learning, improve the efficiency and upsurge quality of education. The development of ICT can help solve communication problems, which is a priority of the NDS 2030, as training could be offered online to anyone in the country, regardless of their location. The prerequisite for that, though, is affordable and fast Internet connection, suitable resources and software products. Lessons and videos can be offered through the Internet, expanding the boundaries of formal standardized education. Activities in this direction could become a priority of education, especially because many educational products are already developed and used all over the world and can be adapted to local conditions.⁷¹

As in the rest of the world, the COVID-19 pandemic has become a driver for the introduction of remote technologies. As a result of the pandemic, some of the educational activities have switched to a remote format. But at the same time, great difficulties are noted in accessing high-quality Internet in remote regions in Tajikistan. In fact, full-fledged online training is available only to residents of Dushanbe or regional centers.

However, the breakout of COVID-19 exposed the real strains in introducing modern technology into the education sector, which faced serious challenges in transferring to distance learning. Both the level of such education and the availability of the Internet proved to be a serious constraint. Schoolchildren and students in rural regions were not able to study using the Internet due to a lack of Internet coverage in distant and mountainous areas, a high cost and low speed of the Internet. Simultaneously lack of skills among the teachers, together with the difficulty to access Internet and lack of suitable devices appeared. In April 2020, the Ministry of Labour, Migration and Employment adopted a crisis plan for the impact of COVID-19 on the labour market with 12 measures of social support for vulnerable groups. However, this plan did not foresee any measures to develop distance learning.

In June 2020, the MoE in partnership with UNICEF Tajikistan developed an Education Sector Contingency Plan to ensure quality and inclusive uninterrupted learning models for children, while keeping them safe at home as a precaution measure. The Plan provided alternative methods and tools for distance learning such as Interactive Mobile Platform with online and offline functionality that delivers necessary content to mobile services, smartphones and PCs.⁷²

⁷¹ Technical and Vocational Education and Training in Tajikistan, March 2021, Asian Development Bank, <https://www.adb.org/sites/default/files/publication/691671/tvet-tajikistan-central-asia.pdf>

⁷² <https://www.unicef.org/tajikistan/press-releases/ministry-education-and-science-working-unicef-and-european-union-ensure-quality-and>

On the other hand, the “Situation Analysis of Education System Readiness to Distance Learning” performed in Tajikistan exposed the following challenges:

1. “Infrastructure. Though the ICT and energy industries demonstrate relatively advanced digitalization, the domestic communications infrastructure is not ready to meet the growing demand of the education system for distance mode of learning:
 - a. No reliable broadband Internet access is available even within the large cities, not to mention the rural areas, where over 70% of population live;
 - b. Restricted supply of electricity in rural areas, though officially no restrictions are introduced;
 - c. Available technical capacity of universities for hosting web servers is not enough to create online educational resources and meet the demand of higher education students, let alone secondary schools’ students.
2. Software Applications (Content). There is no official strategy or a program for the development of electronic educational content. Some efforts of universities for such content development are isolated actions rather than a well-planned approach.
3. Teachers. The schoolteachers do not have enough experience for teaching online and a very few qualified university teachers are not enough to introduce online learning widely.
4. Methodical support. The online education integration is not a priority in Tajikistan. There is a lack of qualified personnel and methodical materials to support teachers and promote online education.
5. Policy. The priority is computerization of secondary schools to conduct at least a subject “Information technologies”. Though the state educational standard envisages application of computer technologies for teaching of all school subjects, it is not fully applied in practice today”⁷³.

The report ‘*Skills development in the time of COVID-19: Taking stock of the initial responses in technical and vocational education and training*’ by the International Labour Organization and the World Bank enumerates (among disruptions to TVET programs due to the COVID-19 pandemic) obstacles to continuity in the provision of training to TVET learners for the following reasons: a lack of general and technological infrastructure (electricity, the Internet, connectivity and devices), a lack of an effective and user-friendly distance learning platform, a lack of staff capacity to support distance learning through quality pedagogical resources, and financial resource constraints. The anticipated consequences identified from the survey conducted by IOM and WB include: a difficulty with TVET student engagement and quality assurance in the remote learning format, a drop in access and affordability of TVET programs during the crisis, an increased cost of completing TVET programs during the crisis, an increased risk of learner dropouts from TVET programs, and a lack of motivation of teachers and managers.

⁷³ World Bank Group, Research on the Digital Economy Readiness of Tajikistan

6 Stakeholders' expectations

6.1 ALE providers' perspective

Based on the interviews with ALE providers, digitalization situation and trends seem quite contradictory in Tajikistan. From the point of view of ALE providers, the main limitation in digitalization is the low quality of the Internet and its inaccessibility in remote regions. On the other hand, according to Internet providers and local experts in the field of digitalization, the situation with the availability and quality of the Internet is changing quite rapidly. Based on interview data we can state a big difference in perception of the internet infrastructure development trends in Tajikistan. Unlike ALE providers and civil society organizations representing the voice of vulnerable groups, policy stakeholders are much more optimistic, assessing these trends. According to experts from the telecommunications sector, now the main constraint is not the width / high cost of trunk channels outside the country, but the capacity of networks outside Dushanbe. This problem is solving now by private and international investments. The problems of the quality and availability of the Internet at the level of regional cities will most likely be resolved in the next year or two. The situation is described in detail from the point of view of actors involved in policy issues in the field of digitalization in Section 6.3.

The second limitation to digitalization in ALE is the fact that a significant portion of the population cannot afford a computer, tablet, or a smartphone. In rural areas, many families use a conventional push-button telephone, and often more than one family member uses the same telephone. Therefore, when broadband Internet becomes available, the problem of access to technologies for the rural population will remain. At the same time, the interviewed providers note that for many of them there are problems with basic digital literacy skills among vulnerable/ marginalized groups - people (especially in rural regions) often do not have gadgets nor experience of using them for educational purposes. According to experience of the interviewed ALE providers, the vast majority of ALE participants use smartphones as their main digital education tool.

The interviewed ALE providers understand digitalization rather narrowly - primarily as a mechanism of communication between a student and a teacher (via remote communication channels), as a way to reduce the cost of creating and distributing educational content (using digital formats instead of paper ones). Some commercial ALE providers specialize in digital technologies as the content of training - they train specialists in the field of information and communication technologies, organize courses in digital hygiene or safe online behavior. At the same time, based on the interview data, ALE providers in Tajikistan have quite a modest capacity in terms of the use of digital technologies in the educational process.

Few of the representatives of non-profit ALE providers see national or international trends in the digitalization of society. The trends that they are familiar with (digitalization of public services, the financial sector, transport) are most often not perceived as a challenge in terms of education, due to the fact that digital literacy is considered an advanced skill, and among vulnerable groups there is a need for basic

literacy training (writing, reading). The second reason for the low interest in the topic of digitalization is the fact that mainly ALE in Tajikistan is professional education and, in the case of working with vulnerable groups, aims at employment. As a rule, for the unemployed to be employed, training in basic computer skills is sufficient - typing texts, printing files. Acquiring even these simple digital skills significantly increases the chances of employment.

Vulnerable and marginalized groups are in the key focus of non-for-profit ALE providers in Tajikistan. The most usual target groups for ALE are poor households, women in these households, adolescents and young adults, PwD, elderly people (especially with limited mobility and weak digital skills), ex-prisoners, people from remote rural areas, wives of migrants. Their needs are usually focused on literacy, vocational education, soft skills, basic ICT skills and income generation. An important factor in understanding the landscape of marginalized groups is the Civil War in Tajikistan⁷⁴ from 1992 to 1997. Many children who were raised during the Civil War had limited or no access to education. They are now adults without basic literacy skills and, accordingly, are vulnerable.

In the formal education system (school, university), interview respondents describe several important limitations. Firstly, almost all respondents noted the fact of the existence of a direct legislative ban on the use of phones and smartphones in schools and universities (already mentioned above in the framework of desk research). Formally, the student does not have the right to take a picture with the phone of anything written on the board. Secondly, teachers and lecturers themselves are not sufficiently proficient in digital technologies. Several respondents who participated in training teachers in basic digital skills (presentations, handouts, videos, etc.) noted that teachers, having acquired the necessary competencies, very quickly found a better-paid job in the private sector or in the public service. For instance, an interview respondent claimed that about 70% of teachers who had been trained in computer and digital literacy through a particular project changed jobs after the course. As a result, this has caused a disagreement with the MoE.

Commercial providers engaged in ALE (ICT, foreign languages, vocational training in professions popular among potential migrants - "Nauchis" center was mentioned as an example) seem stable. Participants pay for the training hoping for further employment. At the same time, representatives of the ICT sector note a tremendous shortage of ICT engineers in the labor market and assure that programmers, testers, data analysts and other junior-level specialists can be easily employed with salaries that are much higher than the national average. Accordingly, people are looking for funds (including bank loans) in order to get the opportunity for such employment. As part of the study, we were not able to verify the fact of the demand for education loans through the analysis of specific cases. However, two respondents mentioned the practice of studying on credit for the purpose of future employment. Also on the website of at least one Tajik bank⁷⁵ there is an offer of consumer loans for the purpose of education.

⁷⁴ https://en.wikipedia.org/wiki/Tajikistani_Civil_War

⁷⁵ <https://www.arvand.tj/cl/kredity/education>

Non-profit providers operate primarily with international funding and are therefore more vulnerable in terms of sustainability, as the marginalized groups they work with cannot afford to pay for training.

State providers of ALE (adult training centers, as mentioned above, are part of the infrastructure of the MoL, and, accordingly, are primarily involved in vocational education) are quite stable. They receive government funding for the maintenance of infrastructure, partially subsidize the cost of training and cooperate with international organizations (including DVV International) to introduce new courses, technologies or ALE approaches (for example, inclusive education). However, the range of professions implemented in adult education centers does not imply digital education. Basic knowledge and skills are offered within the framework of courses in beekeeping, gardening, sewing, cooking, etc. Digitalization is limited to the use of video materials from online platforms or elements of blended learning in the educational process.

According to the latest experience of providers from the pandemic period, the most frequently used applications and programs for digital education are social networks (most often WhatsApp, Facebook, YouTube) as well as various online and collaboration platforms (Microsoft Teams, Zoom). MoE has also introduced a special platform for online education as an alternative for the pandemic time. This platform, according to interviewed experts, is not so much an e-learning tool but a structured (cloud-based) archive of educational materials for educational use. Some interviewed experts also note a high probability that some of the materials may violate copyright. Most of available education platforms are in English or in Russian. The lack of Tajik interfaces for online tools was mentioned as one of the barriers to widespread adoption of these technologies.

Attempts to discuss possible topics/ directions for development interventions to support digitalization of ALE, education for digitalization, ideas for improving the quality of life using ALE and digitalization and zones for further improvement with representatives of ALE providers caused serious difficulties. The respondents involved in the policy development and those who are familiar with the state policy in the field of digitalization also cannot answer the question about zones for further improvement since they are limited by their ideas about the humanitarian nature of the activities of public organizations and international projects. For example, they suggested the following ideas:

- organize an EU project to develop animated school textbooks;
- create Internet centers (centers of public Internet access) in villages, for example, according to the American Space model;
- set up local servers in remote regions with databases and digital libraries;
- create an online validation for professions that are in demand among those leaving to work in Russia.

In other words, the interview participants proposed very conventional ideas for further activity: to invest resources in digitization of educational content, development of courses for vulnerable groups and development of infrastructure for these courses. In fact, the interviewed ALE providers cannot offer a realistic vision of the future and

strategies for the activities of non-profit organizations due to the fact that they are not familiar with successful cases or practices and expect direct interventions from international players to solve specific problems and challenges they observe.

6.2 ALE beneficiaries' perspective

As it was nearly impossible to get a direct opinion of final beneficiaries regarding ALE and digitalization due to complicated access to them, their perspective was presented via interviews with managers and members of the boards of NGOs representing interests of different vulnerable groups.

Regarding the digitalization situation and trends, needs and demands, the respondents were unanimous in their assessment of the poor quality of the Internet and limited access to the digital infrastructure outside big cities. The next common feature was the low number of smartphones and other digital devices among some parts of the population of Tajikistan, especially inhabitants of remote areas. When there is only one phone or smartphone per family, it is usually the head of the family who has a priority to use it. In addition to that, most people in communities have low digital skills and cannot use all technical abilities of smartphones or they use them exclusively for entertainment. This situation significantly reduces the ability to use digital gadgets for ALE purposes.

The general trend is that young people actively communicate in social networks and exchange information. A significant part of the population of Tajikistan is in labour migration and they study messengers and video communication tools to keep in contact with their families. Also, young people actively use the Internet for entertainment, and they are active consumers of video content. Young people actively use various digital services, too - most often banking and service management of mobile operators. The older generation (50+) is usually not involved in such communication. But at the same time, respondents note that the exclusion unwillingness of the older generation for digitalization is not a problem, since strong ties in communities and families allow the older generation to receive assistance from young people. Such exclusion caused by number of reasons (lack of basic skills, lack of access to devices, lack of money to pay for internet etc). Several discussions on whether educational programs on the use of smartphones and digital services (government, banking) for the older generation should be considered a priority, ended with the conclusion that it is better to direct efforts and resources to appropriate training of the younger generation. Then they can and should help older people in the community. A bigger problem is the narrow range of interests and needs of young people in combination with low functional literacy (for example, inability to critically evaluate content, verify information sources). The formal education system cannot manage this spectrum. As a result, interest is formed around consumption of entertainment content and communication.

Many respondents note that both young and middle-aged people understand the correlation of skills/ competencies with their goals and interests, and consequently, they can easily and independently master the necessary digital skills. As an example,

the issue of the implementation of digital COVID passports and digital PCR tests by the Russian Federation was given - migrants very quickly mastered the applications and learned to track the changing requirements for crossing the border, although there was no special training on these issues. Based on the results of such discussions, it can be concluded that ALE needs to focus on the formation of demand among beneficiaries for education - professional, soft skills, civic - and show the connection between competencies and personal goals/ interests (which are usually in the field of employment and income from a professional activity). The demand for training will create the demand for content, subsequently, people will search for it and master it themselves.

6.3 Policy-makers' and international actors' perspective

As part of the study, the experts were not able to speak directly with representatives of the public sector responsible for digitalization issues, so they had to limit to interviews with knowledgeable experts.

As noted earlier in the framework of desk research, in Tajikistan there is no ministry or other state body responsible for digitalization. The closest thing to digitalization is the mandate of the Ministry of Communications (MoC). In practice, the MoC is more concerned with the infrastructure and communications. In the policy of the MoC it was not possible to find an understanding of digitalization as a cross-cutting issue or as a reason for a dialogue about education or social support for vulnerable groups. As it is often the case, the digitalization agenda is fragmented in the policies of various ministries. Through the process of interviews and document analysis, the experts tried to understand which of the policy actors have the potential to hold the digitalization agenda as a cross-cutting issue or as a development opportunity at the national level. It seems that the Ministry of Industry (Mol) turned out to be such an actor.

According to the data of several informed respondents, an interdisciplinary group on the digitalization of industry is being created in the Mol (aspects of Industry 4.0 and other modern concepts related to the topic of the production development). In July 2021, the Minister of Industry of Tajikistan signed an order on the creation of the Artificial Intelligence Council under the ministry. "The AI Council has been launched to get community feedback on our national strategy development process. The honorary chairman of the AI Council is the Minister of Industry and New Technologies. The private sector, academic and expert circles, the media, public organizations and prominent public figures will be able to take part in the work of the Council. By our standards, there will be several dozen members representing all sectors of the economy, as well as foreign experts from the world's leading companies, including Google and Facebook".⁷⁶

Given the fact that Tajikistan is seen as an industrial country at the public policy level, the Mol has the potential to promote ideas and strategies at the national level. Interview respondents familiar with policy documents note the high quality of the

⁷⁶ <https://asiaplustj.info/ru/news/tajikistan/economic/20210806/tadzhikistan-budet-prodavav-intellekt-iskusstvennii>

strategies and their interdisciplinary nature. In particular, it is noted that the MoI has an understanding that one of the constraining factors for the development of industry is the lack of personnel capable of using digital technologies in industry - both at the stage of concept and implementation and at the stage of production processes. Based on the data obtained, the MoI can become an entity that forms the demand for digital competencies in the economy and, accordingly, this demand can be articulated to the VET system. These policy initiatives appeared in 2021, the corresponding documents are at the stage of projects or expert discussions and are not yet available in open sources.

Among other policy initiatives, the “concept of the digital economy of the Republic of Tajikistan” approved in 2019, should be noted.⁷⁷ The Ministry of Economic Development and Trade is responsible for its implementation. The concept includes measures for four strategic goals for the development of the economy of Tajikistan:

1. Ensuring energy independence
2. Breaking the communication deadlock
3. Food security
4. Accelerated industrialization of the country

At the same time, in the documents available in the public domain, there is no mention of the systemic inclusion of ALE elements as elements of strategies for achieving these goals.

It is also important to note that at the beginning of 2021, the President of Tajikistan ordered the creation of the Agency for Innovation and Digital Technologies under the President of the Republic of Tajikistan. It has not been created yet; however, it is likely that a public advisory council will be created under him and DVV International and its partners could promote ALE and TVET education narratives through this section.

As mentioned earlier, two ministries in Tajikistan (MoE and MoL) are involved in shaping education strategies and policies. The first deals with the regulation of formal education issues, the second one manages the infrastructure of VET. As one interviewee noted, digitalization processes in formal and vocational education have not yet moved from technique to technology. In other words, the regulator and providers (both formal and vocational) are primarily focused on developing the infrastructure, providing educational institutions with equipment (including computers and communication channels). There is some hope that such a strategy will shape the demand for technology in the future. For example, a unified testing system for school graduates has already been created. But the risk is that the equipment becomes obsolete very quickly and there is a risk that the introduction of modern educational and information technologies based on this infrastructure will require updating this infrastructure in a short-term perspective. It should be noted that the infrastructure development is absolutely necessary but by no means sufficient for the introduction of information and communication technologies in the educational sector.

Most of the providers and representatives of the non-profit sector interviewed within this study noted the insufficient quality of the Internet access infrastructure as a factor

⁷⁷ <https://medt.tj/images/news/2019/KCERT.pdf> (rus)

holding back the development of digitalization. This is also confirmed by the analysis of the documents presented earlier. At the same time, these stakeholders described the situation from a consumer point of view - slow, expensive, unstable Internet, inaccessibility of the Internet in remote regions of the country. On the other hand, interviews with a representative of an Internet provider and experts involved in an expert dialogue on the development of communication infrastructure noted that the situation is changing rapidly and in the next year or two all regional cities of Tajikistan will have communication channels with sufficient bandwidth. Internet providers are also actively developing their own infrastructure and connecting households to high-speed Internet. This means that in the near future the problem of the Internet quality will be partially solved, at least at the city level. The interview also provided information that international institutional investors are actively investing in the communications infrastructure in Tajikistan. Although some individuals may experience difficulties in the quality of communication for some time, the issue should be solved at the level of educational institutions, business centers, office buildings and apartment buildings. Thus, on the one hand, in the current situation in Tajikistan, the quality of communication is a significant factor holding back the digitalization of various spheres of life, on the other hand, there are significant prerequisites for this situation to change in the next one or two years.

The price of Internet access for end users will naturally decrease as broadband channels become available in the regions. Remote and rural areas with low population density will likely have to settle for expensive, low-quality internet for a while longer. But expanding the access of the urban population to high-quality Internet will be accompanied by a price reduction.

As part of the analysis of documents and during the interview process, the tendency of international organizations to include the topic of digitalization in their activities was clearly visible. Unfortunately, we were not able to conduct interviews with such organizations during the field phase. Representatives of organizations that were invited to participate in the study did not respond to it. Based on the analysis of the websites of organizations and in accordance with the project/program reports published on open data portals we are providing a brief overview for purposes of later coordination and exchange of experiences.

It is important to note the following:

- Tajikistan participates in a number of investments programs and receives loans from the Asian Development Bank, the World Bank and other institutional investors. As a rule, such programs are accompanied by side events to support the adoption of technologies and innovations. At the same time, ALE issues are touched upon in such events to a very small extent. A subject for cooperation and coordination may be the inclusion of ALE issues in the strategy of investment projects. Such inclusion will increase public awareness of these projects and may increase the impact on the quality of life of vulnerable groups.
- Thematic programs of organizations working with issues of certain vulnerable groups (for example, UNICEF). As a rule, they are engaged in the

development of infrastructure and content for the education (usually – formal) of vulnerable groups. In particular, a number of projects that can be attributed to the digitalization of the formal education system are under implementation. First of all, the initiative to translate textbooks and teaching manuals into electronic format implemented with the support of UNICEF is noticeable and frequently referenced. Videoconferencing platforms for remote learning are also being introduced, equipment is being transferred and teachers are being trained to work with such tools.

- Regional development programs, economic development programs (Implemented by Eurasia Foundation, Aga Khan Foundation etc) supporting the initiatives of local NGOs and other organizations/groups. As a rule, such initiatives include educational events - trainings, internships, preparation of educational content. Both digitalization and ALE are a cross-cutting issue for such programs, a way to enhance the effects of project interventions. Co-financing of projects with a strong ALE component as well as synergy of efforts at the macro level can be a subject for coordination and cooperation with such organizations.

In the field of digitalization of public services, the interviewees highlighted the project of the online platform "We Can"⁷⁸ – the initiative of the ex-mayor of the Tajik capital Mahmadsaid Ubaidulloev, which was implemented in 2012 - 2017, but now is currently frozen. Another example mentioned during the interviews was "Dushanbe Smart City"⁷⁹, which also includes scaling experience to regional cities.

To conclude, measures and regulations, elements of planning actions in the field of digitalization in Tajikistan are quite modern, while practical implementation requires efforts and investments. The practical implementation and development of the planned directions will create challenges for ALE. There will be a demand for educational technologies and practices. At the moment, ALE presented in the policy documents is mostly fragmentary, clearly insufficient and non-systematic, while the education sector is still mainly engaged in the infrastructure development.

7 Recommendations

Based on the desk and field research, the following recommendations for DVV International and partners have been developed.

1. Establish interaction with the Ministry of Industry (Mol) and with the Agency for Innovation and Digital Technologies under the President of the Republic of Tajikistan

Based on decisions made at the state level and the trends identified in the study, this ministry is an important stakeholder, it influences the formation of demand in the labour market and forms a shift in the demand towards digital technologies. This means that in the foreseeable future, the demand for VET will include aspects of

⁷⁸ Mometavonem.tj

⁷⁹ Dushanbe Smart City - <http://dsc.tj>

digitalization, and the VET system (which is one of the main focuses of the country office of DVV International) will have to satisfy this demand.

Given the weakness of horizontal links among individual policy actors in the regional governance systems, an external actor will be needed to facilitate coordination between the MoL and the MoI. The engagement of DVV International and its partners together with assistance in coordinating ALE and VET strategies between these ministries (and possibly other stakeholders) can have a tremendous effect on the institutionalization of ALE and based on the findings of the study, should be one of the macro-level priorities for DVV International.

Therefore, it is important to ensure that ALE stakeholders are adequately represented. It is also important that these stakeholders have the resources to prepare the necessary argumentation for their position, the ability to present practices and methodologies that allow promoting ALE when developing the described strategies for digitalizing the economy.

Enter into negotiations with the UN Industrial Development Organization (UNIDO) on cooperation and a possible joint project(s) in the field of digitalization of the industrial sector with the inclusion of an ALE component, implemented by the country office of DVV International together with local partners.

2. Undertake efforts to substantially update the educational programs at the NATC and other ALE and training providers, complementing them with modern and competitive professions

From the point of view of the beneficiaries' interests, the interviewed stakeholders, especially those related to the business sector, see a huge gap between supply and demand in the labour market. This applies to both areas related to ICT (programmer, integrator engineer, system administrator, administrator of specialized software) and conventional professions (journalist, PR specialist, construction worker).

In practical terms, there is a demand for expertise from DVV International on mapping needs and demands in the labour market in order to show this demand to ALE providers (non-profit, government, commercial). According to the interviewees, business experts are ready to act as teachers for free or for symbolic remuneration, if they have the possibility of recruiting graduates of educational programs. A related direction, which could become the point of attention and efforts for DVV International is the identification of stakeholders, the implementation of processes of demand's identification and consolidation in the labour market. Providing expertise analytics on how to meet this demand by ALE providers (assistance in the development of educational programs, contacts with stakeholders) will reduce the gap between supply and demand while significantly increasing the potential of ALE providers.

3. Organize activities to converge the vision and strategies of different sectors and help them see promising strategies at the intersection of ALE and digitalization

The role of DVV International and/ or its local partners is seen in facilitating communication among business, public sector and the civil society. From the actors' perspective, these sectors can be represented by the players that form supply and demand (ALE providers) in the labour market. Business is afraid to directly enter into communication with the decision-makers and, moreover, is afraid to criticize the policies of the actors. There is a need in entity, actor or platform that will facilitate a policy dialogue. Analytics and successful demos will be required to ensure the quality of this dialogue. An international voice and transfer of best practices in this area will be needed. The Adult Education Association of Tajikistan and other partners of DVV International could fulfill this role with expert and mentoring support from DVV International.

At the same time, support efforts of local advocacy actors and NGOs representing the voice of different vulnerable and marginalized groups in relation to ALE. Negotiate and coordinate strategies and joint efforts of ALE with other international organizations for proper advocacy/ policy influence and engagement of additional local and international stakeholders.

4. Apply a long-term approach from DVV International on macro/ meso/ micro level (at least 5 - 7 years) in planning, communication with stakeholders in Tajikistan and implement interventions related to digitalized ALE with the focus on impact assessment

Continue planning and implementation of complex (on macro/ meso/ micro level) projects focused on piloting educational programs aimed at improving the quality of life of vulnerable groups of the population of Tajikistan, while simultaneously enhancing the use of digital technologies in these programs in education and training target groups in digital literacy skills.

Shift the focus of building the capacity of ALE providers towards developing educational programs that are not based on provider content. Programs that will allow beneficiaries to learn how to learn, to shift the focus from the formation of competencies and skills to finding and achieving educational goals. Teach ALE providers to work in identifying and meeting educational needs, building personal educational trajectories, independently or with mentoring support, teach beneficiaries to identify competencies that give them a competitive advantage (in work, employment, business, etc.) and teach how to find digital content, which will help obtain the necessary competencies.

The practical organization of such programs may include efforts at the macro level to generate demand for competencies (promoting the principles of digitalized ALE at the level of industry regulators and key actors, presenting best practices and cases to opinion leaders, supporting evidence-based policy development, etc.). At the same time, at the micro level, support the efforts of providers to find sustainable strategies independent of grant support (promotion of successful employment/self-employment cases of program graduates, development of alumni programs etc.). At the meso

level, stakeholder engagement and facilitation of cooperation between stakeholders of all macro/ meso/ micro levels will be required.

Improve understanding of the importance of digital skills among people of Tajikistan. Support awareness raising activities in society aimed to change the mindset of people and demonstrate them the advantages of ALE and the development of ICT competences to improve life standards and their economic success.

8 Annexes

8.1 Annex 1: Interviews held with key informant in Tajikistan

Date	Session	Institution	Number of representatives
04 June 2021	Interview	DVV International Country Office	1
08 October 2021	Interview	Adult Education Association of Tajikistan	1
09 October 2021	Interview	NGO "Center for Information and Communication Technologies"	1
22 October 2021	Interview	NGO "Equal Opportunities"	1
22 October 2021	Interview	Public Fund Civil Internet Policy Initiative	1
26 October 2021	Interview	Center for Sociological Research "Mirror"	1
26 October 2021	Interview	NGO "National Union of People with Disabilities of Tajikistan"	1
29 October 2021	Interview	NGO "Bureau on Human Rights"	1
30 October 2021	Interview	Internet Service Providers Associations	1
03 November 2021	Interview	Eastera Co. Ltd, Internet Provider	1
03 November 2021	Interview	Public Fund "Internet"	1

8.2 Annex 2: Interview structure as defined in the Inception report

Aspects	Macro	Meso	Micro	Respondents/ stakeholders
Digitalisation situation and trends, needs and demands in the selected countries and regions	<ul style="list-style-type: none"> • Current situation, • Digital strategy • Information infrastructure • Legislative and regulatory limitations • Progress with implementation of selected SDGs 	<ul style="list-style-type: none"> • Situation and trends (including digital divide) • Needs and demands • Technical limitations 	<ul style="list-style-type: none"> • Level and means of digitalisation of population including marginalised groups • Aspects of digital divide 	<ul style="list-style-type: none"> • Key policy actor responsible for education, digitalisation and socioeconomic development • NGO/ NGOs dealing with demands and rights of marginalised groups (including digital, if any), data privacy, governance etc. • DVV local offices as source of verification of the collected data • Providers of digital education (various educational types and levels)
Recent experience of digitalisation efforts in education (HE, SE, TVET, ALE)	<ul style="list-style-type: none"> • Dynamic, challenges, and developments in the last two years • Quantitative and qualitative data • Existing socioeconomic and educational policies and their focus on digitalisation 	<ul style="list-style-type: none"> • Dynamic, challenges, and trends in the last two years • Quantitative and qualitative data (e.g. access to Wi-Fi, Internet connectivity and coverage, e-learning tools, online communication platforms) 	<ul style="list-style-type: none"> • Users' perception of developments and trends in the last two years • Priority needs in education and availability of digitalised education means • Qualitative experience (e.g. access to Wi-Fi, Internet connectivity and coverage, e-learning tools, online communication platforms) 	<ul style="list-style-type: none"> • Key policy actor responsible for digitalisation and/ or education • EUD, USAID, UN agencies and other donors about any projects/ programs related to digitalisation and education • Providers of digital education (various educational types and levels) • Local beneficiaries represented by various marginalised groups (also NGOs representing their voice)

Aspects	Macro	Meso	Micro	Respondents/ stakeholders
Stratification and a descriptive analysis of different social and demographic groups in relation to digital tools and learning formats	<ul style="list-style-type: none"> General level of digitalisation, plans and regulations in this field, stakeholders motivated in improving digitalisation and/or adult education 	<ul style="list-style-type: none"> Level of digitalisation Accessibility of digitalised education Specific needs in ALE, motivation and possible usage of digitalised ALE Specific ALE and digital offers for each of the groups Digital skills and competences of target groups (teachers/ lecturers, beneficiaries) 	<ul style="list-style-type: none"> Specific beneficiaries' needs in ALE, motivation and possible usage of digitalised ALE Specific ALE and digital offers for each of the groups Digital skills and competences of target groups (teachers/ lecturers, beneficiaries) 	<ul style="list-style-type: none"> Key policy actor responsible for digitalisation and/ or education Providers of digital education (various educational types and levels) Local beneficiaries represented by various marginalised groups
Analysis of potential and perspective tools of ALE digitalisation in respective countries/ regions with a focus on marginalised groups as final beneficiaries, taking into account further digital divide and objective limitations of the context		<ul style="list-style-type: none"> Good practices in using digital tools for reaching out to marginalised groups in ALE Potential impact of digitalisation on community learning and inclusion of marginalised groups 	<ul style="list-style-type: none"> Perceived benefits of digitalisation in target groups' view Perceived challenges and risks of digitalisation in target groups' view Potential impact of digitalisation on community learning and inclusion of marginalised groups Personal success stories of beneficiaries 	<ul style="list-style-type: none"> Providers of digital education (various educational types and levels) Local beneficiaries represented by various marginalised groups

Aspects	Macro	Meso	Micro	Respondents/ stakeholders
<p>Steps that should be taken to promote and effectively use digital ALE to correspond to the needs of key target/ marginalised groups</p>	<ul style="list-style-type: none"> • Observations, ideas and reflections • Existing or developing plans, complementary to digitalised ALE • Potential approaches to mitigate the risks regarding the use of digital tools 	<ul style="list-style-type: none"> • Observations, ideas and reflections • The most acute challenges of education/ ALE in the country • Potential approaches to mitigate the risks regarding the use of digital tools • Recommendations for ALE providers and networks, national governments and DVV International 	<ul style="list-style-type: none"> • Recommendations for all involved parties regarding digitalisation and their ability and capacity to address beneficiaries' needs 	<ul style="list-style-type: none"> • International stakeholders and motivated policy-makers and experts • Providers of digital education (various educational types and levels) • Local beneficiaries represented by various marginalised groups

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