



Policy Brief

Addressing Socio-Economic Inequality: Decent Work in CAREC'S Green and Digital Transitions in Uzbekistan

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Executive Summary

This policy brief underscores that Uzbekistan’s green and digital transitions are not merely trends but an existential necessity, driven by the country’s high resource intensity, costly logistics, and imperative to create decent work, especially for women, youth, and rural populations. While the government has implemented positive measures like expanding renewable energy, establishing the IT Park, and developing e-government platforms, the brief argues these initial policies have reached a “glass ceiling,” yielding diminishing returns despite significant public investment.

Key challenges identified in this policy brief include institutional barriers such as inertia, state interference in the private sector, monopolies (particularly in infrastructure like utilities and telecom), outdated regulations, and poor governance. A stark “capital city-regions gap” highlights widening income inequality linked to disparities in infrastructure access controlled by inefficient SOEs, contributing to multidimensional poverty outside Tashkent. Decent work creation is hampered by a lack of coordination between employment policy and growth strategies, with growth being capital-intensive rather than productivity-driven, and further constrained by human capital limitations evidenced by poor education outcomes. Furthermore, the green transition faces hurdles like inefficient subsidies, weak land tenure security, and the need for better regional cooperation, while the broader digital transition is limited by poor telecom infrastructure, low digital demand, and skills gaps, despite the IT sector’s rapid growth within the IT Park.

To overcome these barriers, the brief advocates for a two-pronged strategy. Firstly, intensifying institutional reforms to break monopolies, privatize SOEs, liberalize trade and regulations, strengthen competition and governance, improve public investment management, and enhance education quality. Secondly, implementing sector-specific upgrades targeting energy market liberalization, repurposing agricultural subsidies, securing land tenure, removing telecom monopolies, boosting digital demand, and implementing long-term workforce planning with digital skills training.

The brief emphasizes that unlocking the full potential of Uzbekistan’s green and digital transitions, and overcoming the “glass ceiling,” requires integrated institutional and sectoral upgrades focused on fostering a dynamic, competitive private sector and addressing regional disparities.

Introduction

While the green and digital transition is a trend and reality for most countries, for Uzbekistan, it is an existential necessity. First, Uzbekistan has among the highest levels of energy and water intensity of GDP, alongside low efficiency in the use of many other resources. Second, being a double-landlocked country makes foreign trade logistics very costly. One viable pathway, therefore, is to trade in high-value goods and in services that do not require extensive logistics—most notably ICT services—while also promoting the wide deployment of modern ICT solutions and resource-efficiency measures to reduce production costs. The government recognizes this imperative and is advancing measures to foster green and digital transitions, including the expansion of renewable energy generation, the introduction of drip irrigation, and the establishment of an IT Park. Aware of the transformative potential of these twin transitions, the government seeks to harness this momentum to address employment challenges, particularly for women, youth, and rural residents. At the same time, certain e-government solutions—such as the Geoportal for Social Facilities and the Open Budget platform—have helped narrow gaps in access to social services, including those essential for human capital formation.

However, the policy instruments employed thus far by the government to accelerate the twin transitions and promote decent work are nearing the limits of their effectiveness. Continued reliance on these tools alone risks causing the energy, agriculture, and ICT sectors to hit a “glass ceiling” and stall, with substantial public expenditures/investment yielding diminishing returns.

To overcome this development barrier, policy must be elevated to a qualitatively new level through institutional reforms, including fostering competition, advancing privatization, SOE reforms, and strengthening growth and investment policies. From a fiscal perspective, the priority is not to increase the size of public financing and the public investment program, but to re-purpose expenditures, enhance their allocative and technical efficiency, and mobilize private-sector potential. This approach would safeguard fiscal sustainability while cultivating a dynamic and competitive private sector.

The “Capital City-Regions” Gap in Uzbekistan

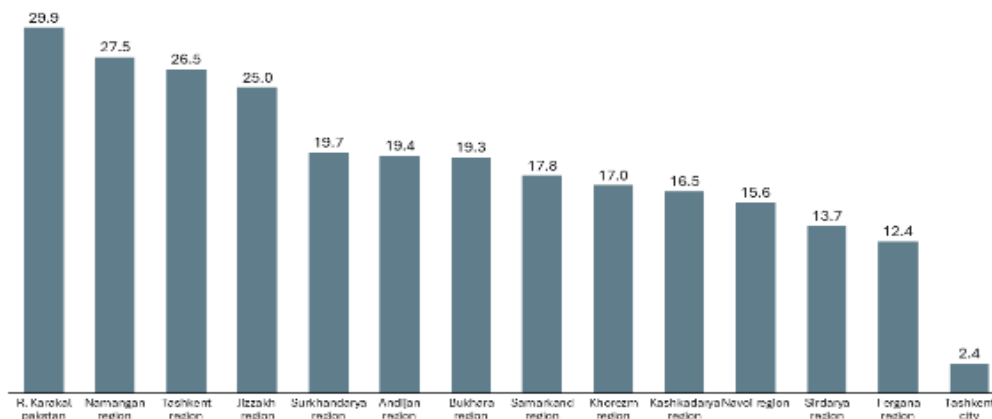
Although the Government of Uzbekistan has not explicitly emphasized combating inequality, nearly all key policy measures have been directed towards reducing poverty, creating jobs, providing opportunities for youth and women, and ensuring balanced development at the subnational level. Certain policies have been implemented at the intersection of multiple themes. For instance, initiatives aimed at developing ICT skills among rural youth, as well as the construction of solar and wind power plants in remote regions, have not only improved energy access but also facilitated the establishment of new industries and, consequently, the creation of jobs at those localities.

Poverty in Uzbekistan declined significantly, from 17% to 8.9% between 2019 and 2024 ([Gazeta.uz, 2025a](#)). However, income disparities across regions and professions have widened. For example, the gap in average salaries between the richest and poorest regions increased from 1.97 times in 2020 to 2.42 times in 2024. The gap in per capita income between 3 richest and 3 poorest increased from 2.18 times in 2020 to 2.6 in 2025. The difference in per capita income between Tashkent city and Namangan equals to 4 times ([Gazeta.uz, 2025b](#)). The widening gap in income levels may also be attributed to the faster growth of earnings within the upper-income quintiles and in sectors outside of formal employment, e.g. incomes from entrepreneurship, including establishing high-profit sector private enterprises. This phenomenon requires further investigation.

To enhance the targeting and justification of public policy measures, as well as to improve the efficiency of public assistance distribution, the Government of Uzbekistan, in collaboration with development partners, is actively studying poverty and inequality profiles, among other related issues. As part of this effort, new approaches to understand the roots of inequality are being developed. One such initiative is the assessment of multidimensional inequality through the Multidimensional Poverty Index (N-MPI), which was conducted based on 2022 data (UNDP, 2023). According to N-MPI, 18.4% of the adult population are multidimensionally poor (4.2 million). For comparison, the monetary poverty rate was 14% in 2022. Educational attainment (13.7%), food security (11.7%) and informal employment (11.5%) are the highest contributors to the overall multidimensional poverty. There are some factors linked to lagging in the green and digital transition that contribute to multidimensional poverty: communication and technology is 3.12%, and heating fuel is 8.99%. Therefore, developing these aspects of the green and digital transition could reduce poverty by 12.11%.

We can conclude that the key factor of inequality is “capital city–other regions” gap; N-MPI in Tashkent city is only 2.4%, several times less than the country average of 18.4% (Figure 1). The next region–Fergana–has a poverty rate that is five times higher. According to the qualitative analysis, the key cause–access to infrastructure, especially electricity, natural gas (heating fuel), potable water and sanitation. Infrastructure services are provided by large SOE monopolies. They demonstrate very low performance and efficiency (World Bank, 2024). Despite energy and utility tariffs increasing several times during the last 3 years in the framework of energy and utility sector reforms, quality and access have improved very little. These SOEs have a very low level of accountability and transparency and international financial institutions consistently recommend improving corporate governance and privatizing these SOEs.

Figure 1. Incidence (H) of the pilot N-MPI by region (sorted by H, %)



Source: UNDP (2023).

One World Bank survey of businesses suggests infrastructure problems as one of the primary constraints faced by manufacturing and service firms (World Bank, 2024b). Low access to infrastructure is a key barrier for establishing modern and competitive companies outside of Tashkent - especially in manufacturing or high value service subsectors (World Bank, 2024a).

Towards Decent Work from an Informal Market

As other countries of the region, Uzbekistan has a young population with a high birth rate that creates both opportunities and challenges. The government tries to implement policies for creating sound ground of long-term development based on demographic dividend. In part of employment policy, we can mention implementing new active labor market tools, including training for unemployed, subsidies for employers for recruiting certain categories of unemployed and launching a series of programs for supporting self-employment, small business with low-interest rate loans, various subsidies, training, access to resources. The government places strong emphasis on promoting gender equality and youth employment: targeted subsidies and support programs are provided for these groups. For example, each year, the government allocates 200 billion UZS to cover tuition fees for female students pursuing master's degrees at state universities. Additionally, 1.8 trillion UZS is allocated for low-interest education loans to support students at the bachelor's level.¹ Geographically the government also tries to focus on underdeveloped regions such as the environmentally unfriendly Republic of Karakalpakstan and overpopulated Fergana Valley.

However, decent employment policy underperforms owing to lack of coordination with and quality of the growth and investment policy. Recent research by the World Bank demonstrates that growth in 2017-2022 was driven by capital deepening, not total factor productivity (TFP) and less jobs creation. Almost half of investment was in machinery and equipment (with residential and nonresidential property constituting the next largest category of investment). Investment in research and development is considerably low, at just 0.04% of GDP. High investment has led the ratio of capital to output in the economy to increase from 1.9 over the period 2010-2016 to 2.5 in 2017-2022, and the incremental capital-output ratio rose slightly from 1.0 to 1.1, suggesting decreased returns to investment. Declining

¹ Presidential Decree #PF-47 dated March 7, 2022 "On Further measures to support family and women"

returns to capital point to economic inefficiencies and may be associated with lower TFP. As a result, in 2017-2022 employment growth is outpaced by working age-population growth, with employment growth averaging 0.5% compared to working-age population growth at 0.9%. Therefore, improving investment policy, especially Public Investment Program, could contribute to reducing gap between net new jobs and labor force increase. Also, excessive regulation, high transaction costs, monopolies, SOEs as well as poor infrastructure blocks development of the private sector and decent jobs creation (World Bank, 2024b). Poor governance, low transparency and accountability results in underperformance of employment policy measures.

Another factor hindering Uzbekistan's potential for increasing high-earning and decent employment is human capital limitations. The 2022 Programme for International Student Assessment (PISA) results show that 80% of students in Uzbekistan lack minimum proficiency in Mathematics, Reading, and Science. While students are expected to complete 11 years of schooling, this drops to 9.1 years for girls and 9.2 years for boys when adjusted for learning quality. A recent World Bank study (World Bank, 2021) also shows that the productivity potential of children and young people in Uzbekistan will be about 40% below what could be possible had they had access to better education and health provision. The education reform program in Uzbekistan, focusing on quality improvement, can yield a GDP that is, as students join the workforce, 5% greater than it would have been without these reforms.

Unlocking Green Transition Opportunities: Overcoming Institutional Inertia and Active Interference of State Administration into Private Sector

The current government of Uzbekistan inherited economy that relied on intensive usage of natural resources, particularly natural gas, oil, soil and water. As a result, economy faces limitations on energy and water supply that hinder competitiveness and worsens environment, especially in underdeveloped western and southern regions as well as brings to air pollution in urban areas. Furthermore, inaction will compromise energy, water, food security and land degradation.

The Government of Uzbekistan launched several reforms to overcome this problem from the end of 2010s and mid 2010s and examples include limited modernization of electricity generation and some reduction of cotton growing areas. These reforms become more comprehensive and diverse after 2017. Examples of approved key policy documents are: Program on transition to green economy and green growth until 2030, State Program for 2025 “Environment Protection and transition to Green Economy,” National Program against Dust Storms and Mitigating Negative Effects of Dust Storms, Decree “On improving governance on energy efficiency and developing market of energy saving services,” Concept of Water Management Development until 2030, Concept of Environment Protection until 2030, Agriculture Modernization Strategy.

The green transition areas of priority in Uzbekistan are: decarbonization and modernization of agriculture/water saving. In part of decarbonization Uzbekistan consistently increasing renewable energy generation. If in 2018 there were only hydropower plants, by 2025 5 GW of solar and wind generation capacities would be established. The Government of Uzbekistan upgraded initial plans to reach 25% of renewables in energy balance by 2030 to 54% of renewables share. Energy saving turned into a priority from 2025. Incentives for energy saving also created through reducing energy subsidies (increasing energy tariffs) and supporting “esco” model contracts. However, large opportunities of decarbonization through increasing green cover and soil carbon sequestration are almost not utilized yet.

State order system for cotton and wheat and implicit taxation resulted in very low water productivity in agriculture (only 42 cents of agricultural output per 1 m³ of water) and low value added per hectare of arable land and livestock. The Government of Uzbekistan eliminated cotton and wheat state order systems in 2020-2023. Climate change coupled with low efficiency of water-usage brings to water shortages for irrigation. This in turn resulted in reducing irrigated areas, abandoning remote fields, lower yields and consequently lower income of the rural population. A large water saving campaign launched from 2020, with a goal to cover one million ha of arable land with water saving technologies. The program was successful in the horticulture subsector, but in the key water-consumer–cotton subsector, it was accompanied with large leakages, price-inflation and technical problems. Modeling the application of climate-smart agriculture (CSA) has shown that Uzbekistan needs to adopt a more ambitious and optimistic scenario of CSA uptake to continue farming under the current dynamics of water availability reduction and soil degradation. It is estimated that the implementation of the optimistic scenario will create 106,000 full-time jobs. Implementing CSA also will increase demand for digital technologies such as agricultural drones, remote sensing, yield forecasting, IT solutions for efficient irrigation systems and farm management. CSA uptake generates demand for new, high paid jobs in the rural areas.

The implementation of green solutions efficiency and scale is often low due to a number of institutional constraints:

- underdeveloped system for accumulating and transferring knowledge and experience, including lessons learned from previous projects and initiatives. This results in repeating previous failed projects;
- various monopolies and restrictions on technology imports, that inflate costs of green solutions implementation;
- outdated norms and regulations, especially in the building sector;
- active intervention of government agencies, SOEs and SOBs to green solutions implementation by the private sector, coupled with incompetence and low accountability/transparency result in the selection of inefficient solutions, low performance and inflated costs;
- low priority of green solutions in agriculture public support—the share of harmful variable input subsidies increased from 32% to 42% in 2020-2023 and coupled livestock output subsidies from zero to 5%. Also, almost half of the agriculture public spending is still focused on low performing programs related to cotton and wheat; and,
- weak guarantees of land tenure, the de-facto continuing to exist crop placement system, underdevelopment of general support services, particularly Agriculture Knowledge, Innovation and Science (AKIS).

Regional cooperation on shared water resources, particularly with neighboring Central Asian countries, is also critical for sustainable water management. Upgrading the regional cooperation in energy-water-food nexus will generate enormous benefits by properly using competitive advantages of each country rather than continuing to produce “everything needed” domestically. Regional cooperation on green development has not been optimized due to trade restrictions and weak institutional structures for inter-state coordination. There are some few examples of regional cooperation—a joint venture to build Kambarata-1 hydropower station in Kyrgyzstan, that will be implemented by 3 countries located on the Syr-Darya River basin. Another future project is the electricity–transmission line CA-EU for exporting generated in CA renewable energy to Europe.

Digital Transition: acceleration

Uzbekistan’s digital transition started to take place relatively late, in the mid 2010s. Uzbekistan has adopted a number of policies to close this gap and position itself as a potential hub for IT development in Central Asia. The policies in this area are expressed in the “Digital Uzbekistan 2030 Strategy”. The prominent policy action was the launch of the *IT Park* in Tashkent. The IT Park already has over 1,300 residents employing over 37,000 people (end of 3rd quarter of 2024). The number of foreign firms has grown from just 12 in 2019 to almost 200. IT Park residents currently export plans to reach US\$1 billion by end of 2025. The digital connectivity for IT Park residents is world-class. For strengthening capabilities, Tashkent’s IT Park also runs 200 IT centers, offers several online courses in mathematics, data science, programming, and artificial intelligence (AI), and operates the Digital IT University—the first one in Central Asia. Residents have number of privileges, including tax exemptions, one-stop-shop public services, various subsidies. The Government of Uzbekistan also progressed in implementing E-Government, began enhancing coverage of digital infrastructure, upgraded legal framework for digital trade and creating mass courses on basics of IT. As a result, IT related employment is growing and average salaries in this sector is in second place—13.15 million UZS monthly compared to 5.36 million country average in 2024 (Spot.uz, 2025)

Some activities are being implemented in the intersection of digital and green transition, for example establishing new data centers coupled with building renewable energy 500 MW generation capacities, implementing IT solutions that accompany some CSA and digitization of the utilities sector that promotes resource saving.

At the same time, certain e-government solutions—such as the Geoportal for Social Facilities and the Open Budget platform—have helped narrow gaps in access to social services, including those essential for human capital formation.

Although Uzbekistan achieved good progress in recent years, there are some factors limiting full realization of the IT-related advantages and they may stop IT transition. Firstly, the quality of broadband connectivity also continues to lag. Second, prices for telecommunication-related services are lower than before but remain high compared to some peer countries and advanced economies. The root cause of the abovementioned two limiting factors is low competition in the telecom market—the market is dependent on the state-owned Uztelecom for international gateway access. Uztelecom has a de facto monopoly for providing international gateway access to internet providers and mobile network operators. Providers depend on wholesale prices set by Uztelecom in order to provide internet access to their customers. In 2018, liberalization of the international gateway was identified as an objective under the “Strategy on Innovation Development”, but this was never realized. Third, there are factors limiting demand to IT service: the output shares of more services-intensive industries are relatively low, low use of even the most basic digital technologies in Uzbekistan. Fourth, supply of skilled workforce is a key limiting factor for covering even existing demand. Owing to limited supply of the workforce, currently wages are almost equal to the European Union level. Therefore, some foreign investors are not willing to open joint ventures in Uzbekistan’s IT sector.

Interlinkages and Synergies of Institutional and Sectorial Upgrades – the Only Way to Overcome “Glass Ceiling”

Policy recommendations for Uzbekistan have two layers: institutional and sectoral. Continuing

institutional reforms should be focused on four key aspects:

1. *Consistently continue and intensify reforms on ending various artificial monopolies, restrictions on trade, SOE privatization.* The focus should be including reform of infrastructure service provider SOEs (especially electricity, natural gas supply and telecom), consistently continue comprehensive de-regulation/liberalization (including in agriculture), that will unlock private sector opportunities
2. *Improve general governance, including upgrade of growth and investment policies, capacity of Public Investment Management and policy monitoring.* Key benchmark is decreasing capital to output and incremental capital/output ratio. Fiscal risks of the investment policy should be reduced through upgraded transparency, accountability and efficiency of the PPP framework.
3. *Consistently continue and intensify policies on institutional framework of competition.* Legal framework requires adopting secondary legislation and guidelines to strengthen Competition promotion and Consumer Protection Committee's (CPCPC) enforcement tools and competition framework. It is also required strengthen: CPCPC mandate to core competition tasks, it's operations independence and NGOs on consumer protection.
4. *Improve the provision of public social services, especially education.*

These recommendations are outlined in the context of key sectors in Uzbekistan:

- *Green transition of the energy sector* requires establishing solid knowledge and information base by collecting, systematizing, and disseminating experiences/lessons learned, as well as creating analytical centers, benchmarks, etc. The stimulus for upgrade would be supported by creating competitive and private sector dominant, transparent and consumer protective energy market. For this purpose, the government should continue economic liberalization reforms, including energy/fuel importation and trade, intensify SOE privatization and corporate governance, ensure high level of transparency and accountability of financial flows, tariff formulation and investment projects.
- *Green agriculture* development requires repurpose agricultural subsidies (from supporting harmful practices as variable input use to climate smart agriculture—CSA technologies uptake), improve subsidies implementation frameworks, monitoring and evaluation. Another key area is to continue and intensify implementation of the Land tenure reform: ensure de-facto implementation of recent amendments to land legislation for eliminating crop placement, ensure transparency of governmental platforms on land management, re-organize farmers' unions and develop farmers' right protection tools. Secure land tenure creates large investment inflow and incentivizes farmers. Studies show that land tenure reform also creates opportunities to increase land tax revenues of the State Budget. Other priority policies include increasing finance and service delivery of AKIS, continuing reforms in seed, seedlings certification, quality control for other inputs, improving efficiency of digital platforms/information systems in agriculture. Also important establishing more transparent governance of irrigation systems.
- *The prerequisite of continuing IT transition is to improve telecommunication infrastructure* through removing the international gateway monopoly of Uztelecom, providing functional/more competitive wholesale market, establishing an independent regulator, facilitating licensing arrangements for providers. This will boost investments to improve the quality of broadband connectivity.
- *Accelerating digital transition mainly goes through demand:* implementing comprehensive digitization in the public agencies/SOEs as well as digital solutions uptake by the private sector

by boosting competition.

- *Laborforce supply for twin transition* necessitates application of long-term solutions as establishing long-term workforce planning for correctly investment in human capital as well as upgrading existing laborforce by training management in all levels to think digitally and retraining employees in almost all sectors. Regarding amount of public funding—key issue here not amounts, but implementing public upgraded finance management tools and appropriate prioritization.
- *Public employment service* as bridge between supply and demand of the labor in turn needs applying digital tools, including business intelligence to the national labor market information system to track green and digital job trends, skill shortages, and socioeconomic transition outcomes as well as e-initiatives to address the transition to formality.
- As it was mentioned, *fiscal space* is already in place in form of re-purposing agriculture public support, reducing subsidies to SOEs, improving transparency and corporate management for reducing waste of funds in infrastructure sector SOEs, reducing tax exemptions and improving both allocative and technical efficiency of the Public Investment Program.

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