



## Tracking Green Growth Indicators for Uzbekistan: A first stocktaking exercise-2023

### KEY MESSAGE

- Uzbekistan is becoming more efficient in using water and energy resources. However, the pressure on natural capital still remains and the development of renewable energy sources is slow.
- The natural asset base of Uzbekistan's economy, including land and forest, needs more maintenance.
- The environmental dimensions of Uzbekistan's population quality of life, including access to sewerage and solid waste collection systems are improving. At the same time, challenges remain in outdoor air pollution.
- Energy subsidies are still high and environmental expenditures are small. Tariffs for water and energy use do not represent the cost. Uzbekistan needs to tap into more economic opportunities for the transition to a green economy.
- Data on green growth indicators for Uzbekistan is fragmented and inconsistent. It will benefit if it becomes harmonised with international measurement methods and better data coordination.

### INTRODUCTION

At the start of 2023, the Organization for Economic Cooperation for Development (OECD), together with the Uzbekistan Ministry of Economy and Finance (MoEF), commissioned Westminster International University in Tashkent (WIUT) to study Uzbekistan's green growth status using the internationally recognised OECD based green growth indicators (GGIs).

The Center for Policy Research and Outreach (CPRO) in WIUT led the study.

The study is a first attempt and, thus, a baseline. It builds on thirty years of environmental statistics (1991-2022). The findings of the study and related websites are launched in three languages<sup>1</sup>.

The findings will help Uzbekistan to track and communicate progress in greening its economic growth; make informed decisions; demonstrate accountability to national and international stakeholders; raise public awareness about the links between economic growth and the environment; and compare progress with other countries. This policy brief highlights the main findings and recommendations of the study for future GGI trackings.

### STUDY METHODS

The study employed an extensive data mining exercise. This entailed collecting, cleaning and visualising 30 years of national and international databases for 25 main GGIs selected for Uzbekistan. The study benefited from consultations with green economy stakeholders.

### MAIN FINDINGS

- Uzbekistan's total greenhouse gas (GHG) emissions are the second largest in Central Asia after Kazakhstan. Its emissions per unit of gross domestic product (GDP) are the fifth largest in the world. At the same time, Uzbekistan managed to decrease its carbon

<sup>1</sup> Full report is available at: <https://cpro.wiut.uz/>

emissions per unit of GDP by around 75% in the last 20 years.

- The energy intensity of GDP has been declining in recent years but remains one of the world's highest. Uzbekistan was the eighth most energy-intensive country in the world in 2022. Buildings (residential and commercial) consume about 45% of the energy supply, while industry consumes 21% and transport 18%.
- Renewable energy sources such as wind and solar energy play a minor role (below 2%) in Uzbekistan's energy mix, and their share is significantly lower than the CA average of 15%. Renewable energy sources (RES) made up 9% of electricity generation in 2022. Over 90% of RES is hydropower. The development of renewables is slow despite the high potential.
- Water productivity in the economy increased fourfold to USD 2 per cubic metre (m<sup>3</sup>) of water used in the past 30 years. Despite this progress, productivity remains one of the lowest compared to the European and Central Asia region average of USD 43/m<sup>3</sup> and the world average of USD 21/m<sup>3</sup>.
- Material productivity in the economy (output generated from using a given amount of metal, non-metal, and biomass material) has more than doubled over the last 30 years. The value is the third highest in CA.
- In 2021, Uzbekistan produced ten times more solid waste than five years ago. It generated around 6 million tonnes of household solid waste or 165 kg per capita in 2021. Although waste generation is increasing, current levels are only half of the world's average. However, regular waste collection services covered only half of the population in 2018. Only one-fourth of solid waste was recycled in 2021, although recycling is increasing.
- Mineral fertiliser used per hectare (ha) of cropland increased in Uzbekistan, leading to a rise in excess fertiliser per ha of cropland. It has increased by more than 50% in the past 30 years and was 75% higher than the world average in 2020.
- Agricultural land, which is either arable, under permanent crops or under permanent pastures, makes up almost 60% of the total surface area. Land degradation due to inappropriate irrigation, and poor pasture land and manure management is a major challenge in Uzbekistan. The land degradation is estimated to cost close to 5% of annual GDP. The cost includes the loss of agriculture productivity, increased soil erosion, reduced water availability, and loss of carbon sequestration and ecosystem services.
- Organic farming has increased since 2010, but only makes up 0.004% of agricultural land.
- Uzbekistan is one of the most water-stressed countries in the world. The water stress level or the ratio of water used relative to available water, has significantly increased in the last 20 years from around 50% to almost 70%. The agriculture sector uses over 90% of the freshwater withdrawn. Despite the severe stress, 40% of agricultural water is lost due to outdated irrigation infrastructure. Uzbekistan is investing in more efficient irrigation systems, improved water management practices, to mitigate water stress.
- Forested areas and tree stocks have been increasing. Forests comprise around 8% of total land area, an increase of more than 30% from 2014.
- Uzbekistan has more than 40 protected natural areas. They make up 8% of the total land area, an increase of more than 300% in the last ten years. Over the same period, nearly 20 threatened animal and plant species were added to the national Red Book despite the expansion of protected areas. The heightened risk is due to climate change (and resulting temperature increase), unchecked overgrazing, indiscriminate hunting, and poaching.
- Uzbekistan ranks 11<sup>th</sup> in natural gas production and 14<sup>th</sup> in reserves globally. The gap between production and consumption of gas has decreased due to increased production, reaching 54 billion m<sup>3</sup> in 2021. Natural gas reserves are forecasted to last for 20-30 years. Natural gas losses pose a significant challenge due to outdated infrastructure.
- Uzbekistan is the 20<sup>th</sup> most polluted country in the world in terms of air quality. Major sources of pollutants are dust particles, vehicle emissions and industrial emissions. In the past ten years, the particulate matter (PM<sub>2.5</sub>) concentration in the air has consistently been above the 35 µg/m<sup>3</sup> level considered unhealthy by the World Health Organization (WHO).
- The share of the population exposed to unhealthy concentration levels of PM<sub>2.5</sub> declined from around 80% to 56% over the past ten

years. Nonetheless, the population exposure level is more than five times higher than the world average of 10%.

- Mortality and welfare costs due to air pollution are increasing. Annually, over 750 people per million inhabitants are estimated to die prematurely due to exposure to outdoor air pollution, positioning the country above the world average of 645 people in 2019. Deaths related to outdoor air pollution are the third highest globally. Their welfare costs are estimated at almost 9% of GDP equivalent, compared to around 6.5% in the EECCA region.
- The share of households with access to safe public drinking water supply declined by 10% to around 70% over the past ten years due to outdated water supply infrastructure, increased population and construction of houses, adding burden to the supply. Moreover, there is high inequality in access to drinking water between cities and rural areas. Although over 97% of Tashkent houses have safe drinking water, access is still challenging in rural areas.
- Uzbekistan made some progress in expanding public sewerage systems. Nevertheless, less than half (48%) of households are connected to a sewerage system, and there is inequality between regions. For instance, while all residences in Tashkent City are connected to a sewerage system, only 16% of households in the Karakalpakstan region are connected.
- Uzbekistan has invested in environmental technologies since the early 1990s. Over 15% of the innovations in Uzbekistan in 2018 were environment-related, higher than the world's average of 10%.
- Environmental expenditures are generally showing an upward trend but remain small. On average, they accounted for only 0.06% of total government expenditures or 0.02% of GDP over more than the past ten years.
- The state budget's share of environmental tax revenues remained constant at a 0.01% average between 2015 and 2018. Solid waste collection fees make up 57% of environmental tax revenues. Despite the lack of systematic accounting of all environment-related taxes, environmental revenues from pollution fees, including solid waste and wastewater collection fees, have increased. They were almost four times higher in 2018 than in 2010, amounting to around USD 1.7 million.

- Energy subsidies are gradually declining but remain high. In 2020, fossil fuel subsidies were 60% lower than in 2010 but amounted to almost USD 4 billion (USD 1 = UZS 10 065 in 2020), making up the equivalent of 6.6% of GDP.
- Tariffs for energy resource use do not represent the production cost. However, policies that protect low-income populations object to extreme energy price reforms. Accordingly, electric tariffs increased, but various tariff schemes are set as of 2019 for different categories of consumers. Thus, the tariff for commercial consumers was 30-50% more than for residential users. Similarly, though water tariff levels have increased, water use is still subsidised, and tariffs do not cover the operational cost. The price of water is higher in regions than in Tashkent City. Rates vary by region, consumer residence type, and availability of water meters.

## WAY FORWARD FOR FUTURE GGI TRACKING

This first study encountered limitations related to access to national data, data fragmentation across different institutions, and inconsistency in some indicators' definitions and measurements. The findings stress the need to:

- Build the capacity of the Statistics Agency, MoEF and other relevant stakeholders on definitions/interpretation of GGI terms and international comparable standards on measurability and data requirements to monitor the indicators.
- Establish a mechanism where the different data sources/owners regularly supply information to a coordinating body in the Statistics Agency or the MoEF to track GGIs.
- Establish a database dedicated to the GGIs in the MoEF or Statistics Agency database with historical data since 1991 in three languages (English, Russian and Uzbek). Data can be provided as open access to the public or on a cost-recovery basis.
- Appoint a monitoring and evaluation expert in the MoEF to work closely with the Statistics Agency and other data-collecting institutions to manage, validate, monitor and analyse the GGIs regularly and report. This will help the ministry to make great strides in collecting, analysing, organising and getting value from the data.

- Expand the MoEF's official web portal on-premises to serve as a digital platform hub for GGI-related data from multiple sources (e.g., Ministry of Ecology; Ministry of Water Resource, Cadastre; Ministry of Energy; and Forestry Agency). The portal will help the MoEF leverage data strategically.
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The full report is available at: <https://cpro.wiut.uz/>

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