



Swedish Aral Sea Society

Sustainable Cities: Challenges and Prospects in Central Asia (with a focus on Uzbekistan and Karakalpakstan)

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Principles of a sustainable city:

- environmental sustainability;
- economic viability;
- social equity;
- effective governance and public participation

Processing of Wastes

Region	Processing of solid wastes
EU	45–50%
Germany	Around 70%
Kazakhstan	20–25%
Uzbekistan (Karakalpakstan)	5–6% (5-10%)

Region	Cleaning of Sewage
Central Asia	~20–40%
Uzbekistan	~25–35%
Karakalpakstan	~10–25%

Mountains of garbage are a headache for residents

<https://www.gazeta.uz/ru/2025/10/31/landfill/>

<https://www.gazeta.uz/ru/2012/07/25/waste/>



Features of urbanization in Central Asia

- dry climate and scarcity of water resources;
- high dependence on irrigation systems;
- the legacy of Soviet urban planning;
- rapid population growth and migration

Dry climate and scarcity of water resources



Average precipitation in Central Asia is about 200–300 mm per year in the plains, and less than 100–150 mm in the desert zones.

Rapid population growth and migration

- The population of Central Asian countries is showing steady growth, exceeding 84 million people by 2025. Annual growth is approximately 1.7-2%, making the region one of the fastest-growing and youngest in Eurasia. Tajikistan and Uzbekistan are the leaders in growth rates, and the main increase is ensured by high birth rates.
- Central Asia remains a region with high migration activity, where the main flows are directed to Russia (for employment) and within the region (to Kazakhstan). Tajikistan, Kyrgyzstan, and Uzbekistan are the main "donors" of labor, while youth migration is growing. In 2022, the number of labor migrants from the Russian Federation to Kazakhstan increased.

The main problems

- worn-out infrastructure;
- air and soil pollution;
- inefficient use of energy;
- lack of green spaces;
- social inequality.



Sustainable urban development in Uzbekistan

- modernization of transport infrastructure;
- development of "green" energy (solar and wind projects);
- urban greening programs;
- digitalization of urban governance (the concept of a "smart city")

Challenges:

- high water consumption;
- dependence on traditional energy sources;
- the need to modernize the housing stock;
- adaptation to climate change

Karakalpakstan. Key problems of the region:

- ecosystem degradation;
- dust and salt storms;
- deterioration of public health;
- limited access to clean water;
- economic vulnerability

Approaches to sustainable development in Karakalpakstan

- Environmental measures:
- Economic measures:
- Social measures:
- Infrastructure solutions:

Prospects and Recommendations

- Implement integrated urban planning;
- Strengthen environmental policies;
- Develop human capital;
- Support innovation;
- Increase public awareness

Conclusion

- Sustainable cities are not only an environmental necessity but also the foundation for long-term societal development. Central Asia—especially Uzbekistan and Karakalpakstan—is at a stage of transformation, where decisions made today will determine the quality of life for future generations. A comprehensive approach that considers the region's natural, economic, and social characteristics is key to successful sustainable development.

THANK YOU FOR YOUR ATTENTION!