

**American University of Central Asia**

# **Policy Brief**

## **Urban Rivers in Central Asia: Nature, Space, and Mobility**

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## Research Methodology

The main goal of the project is to study the role of urban rivers in Central Asia, focusing on their relationship to nature, space and mobility. The project aims to provide insight into the current state of rivers in Bishkek and Tashkent, the challenges they face, and potential solutions for their sustainable management.

The project will cover the following aspects of urban rivers in Central Asia:

### **Nature:**

The ecological significance of urban rivers, including their impact on biodiversity and the ecosystem.

### **Space:**

The relationship between urban rivers and urban space, including how rivers shape the urban landscape and how urban development affects the rivers.

### **Mobility:**

The role of urban rivers in mobility, including their potential for transportation, recreation, and tourism.

The project included a combination of desk research and fieldwork in Bishkek and Tashkent. Alamedin and Ala-Archa in Bishkek, as well as the Chirchik River and urban canals in Tashkent were chosen as the study area.

Historically cities were built near rivers because water has been a source of life. People that lived in the territory of Kyrgyzstan one million years ago during the prehistory period did the same thing (Chotaeva). However, rivers in Central Asia are used differently. In Tashkent, rivers along with their channels are both used and treated well, while in Bishkek rivers are not used as sufficiently as they could have been.

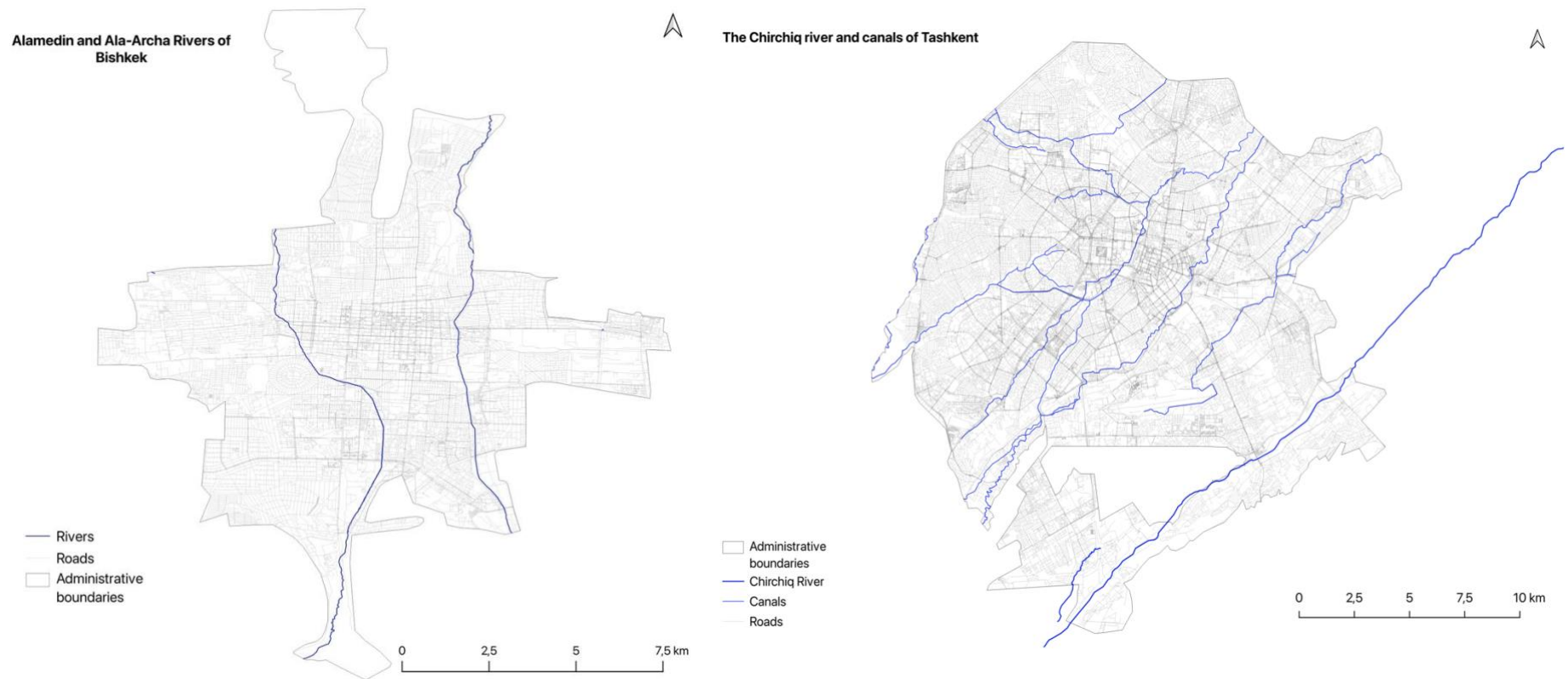


Figure 1. Basic maps of Bishkek and Tashkent with its rivers and canals

One of the main reasons is that in Tashkent river streams are distributed around the whole city, while in Bishkek channels as Bishkek Chui Canal (BChKs) are used for regulating the amount of water between the rivers. If we look at the maps above, we see that Tashkent is completely covered by water arteries, while Bishkek has only two rivers. This is a significant difference between capitals.

Urban rivers are important ecosystems that provide a range of ecological, social, and economic benefits to the surrounding communities. These rivers can be defined as watercourses that pass through or within the boundaries of a city or town, and can range from small streams to major waterways. Rivers as Alamedin or Ala-Archa are able to support biodiversity and provide habitat for a wide variety of plant and animal species, including fish, birds, amphibians, and insects. However, Alamedin and Ala-Archa rivers lack of this capacity. This is due to the poor infrastructure of the two rivers, being heavily surrounded with big factories, and lack of riparian vegetation and trees, and poor waste management system.



Figure 2. River banks

Both the Alamedin and Ala Archa rivers have some areas where surrounding sites affect their biodiversity. For example, factories and households that are near rivers. In Soviet times, there was a rule of "150 meters," which meant that you could not build anything within 150 meters. But over time the rule turned into six meters, nowadays even this number is not met. Therefore, pollution produced by factories and some residences has worsened the quality of water in rivers and resulted in the loss of diversity of flora and fauna.



Figure 3. Industrial areas in Alamedin river

Additionally, due to the lack of waste management, some households and pedestrians have thrown their waste and trash alongside and inside the river channel which makes extra pressure on the rivers. Without a doubt, if marine life existed in the river, it would not

have been able to survive in such a habitat. The same case is with Ala-Archa river but to a lower extent. Therefore, there was a significant difference in the freshness of the weather in its surrounding area. Ala-Archa has a more pleasant and fresher air mainly because there are fewer factories in its neighborhood. Also, there is a considerable distance from the buildings to the river channel allowing the river to have its space. Despite these challenges, there are also opportunities to enhance the ecological significance of Alamedin and Ala-archa rivers through ecological restoration and conservation efforts. Restoring riparian vegetation, implementing green infrastructure, and reducing pollution can help improve the quality of these rivers and they could even provide a habitat. These improvements can also have broader benefits for the surrounding ecosystem and human communities, such as reducing the risk of flooding and improving water quality. On the contrary, canals in Tashkent are very well integrated into the urban landscape and green spaces. This has a significant effect, given the fact that Tashkent has higher air temperatures in summer.



Figure 4. Canals and green spaces in the city center, Tashkent

By taking steps to restore and conserve urban rivers, we can help protect the ecological significance of these important ecosystems and ensure they continue to provide benefits to both people and the environment.

The relationship between urban rivers and urban space is very important. This opens up more ways and opportunities of using the rivers. For example, in Tashkent one of the channels is called “Anhor” and one big piece of it is part of the park while the other piece of it is used for rafting lessons. That is not an actual river, it is a channel; therefore, creating more channels would also create more options for its usage. This channel has become an inseparable part of the park as it contributed to creating a cooling system along with the trees in the park. Because of this, it has become a nice place to visit whether it is cool, cold or hot. When our team visited the site in spring, people were doing a dozen activities: exercising, walking their pets, walking with their babies, bike riding, meeting, having a date, talking, etc. One of the respondents shared that: *they swim in the channel during summer season despite the warning “do not swim” and during cool weather visitors just wash their necks and hands.*



Figure 5. Activities at the Tashkent canal

As the channel continues, a steep ladder was created to create energy from the waterstream. Near it hydroelectric power was built. Since buildings and manufacturing are far away from the river it also leads to less or no river pollution. That is why water streams are clean and well used.

**Canal Section at Intersection of  
Navoiy and Sharof Rashidov Streets,  
Tashkent**

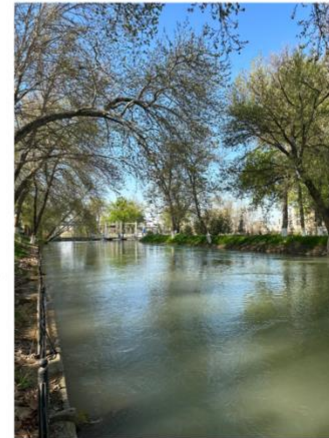


Figure 6. QGIS map of Tashkent showing canal and green areas



Having bars also makes the river safer as seen in the pictures. This is especially needed when the surrounding of the river becomes steep. Having bars would create a feeling of safety much needed while creating a public space. Park was visited by citizens and their children because not only was this park cool thanks to the river and shadows created by numerous trees but also because parents would not need to worry that their children might accidentally fall into the river. Respondents also shared that only once there was a man who drowned and citizens assumed he was drunk in the middle of the night. Otherwise it is a safe place for people to do all the listed activities above. Thanks to the ladder and perhaps other factors like the channel being split into two created a better flow, a torrent of water, a speed of its stream. That became especially favorable for the raffling classes that followed the hydroelectric power station. These lessons seemed very ecological. There was not a specific building dedicated to such classes; there were shelters instead. Buildings would have certainly created obstacles for winds and air; thus impacting the river. Luckily, it seemed like children were exercising in balance with nature as their shelters were not generating any waste among trees where they were placed. As for the rivers in Bishkek they are not very much integrated into city planning. Not only are their streams not distributed around the city, limiting its possible ways of usage, rivers themselves are not in a good condition. First of all there is no public space near rivers, not even pedestrian roads. If good sidewalks were consistently built throughout the streams of the river that would have given an incentive to residents to walk or ride a bicycle or a scooter by the river. For example, here is the picture of Alamedin river and as seen in the pictures, buildings are located too near. Roads are not completely built, there is a thin corridor between the river and the walls of buildings. As for the Ala-Archa river there are no sidewalks at all. People would not walk alongside rivers if there are no pedestrian

walks. It is not convenient nor safe. If one continues the topic of safety then it is clear that there are other risks of walking near rivers.

There are no bars even in places where the riverbanks become steep.



Figure 7. Examples of riverbanks, Bishkek

Another factor that pushes citizens away from getting near rivers and using it as a public space is the fact that rivers are dirty and smell sometimes. Lots of trash is dumped into the rivers. There are no signs warning citizens not to but there are signs saying not to swim. There is a lack of trash cans; thus people just decide to throw their trash into the river, which is not used anyway in their opinion. Streams of these rivers, especially Ala-Archa, became a giant puddle rather than water. The last but not least factor that pushes citizens

away from the rivers is misbehavior caused by its drunk citizens. In Tashkent people also get drunk but usually it happens during the nights and maximum people throw the bottles from alcohol, which are picked up by other citizens in the morning. In Bishkek we didn't directly ask whether there are drunk people; however, there are bars built right on the rivers.



Figure 8. Casino/pub on the Ala Archa River, Bishkek

As we see from this study, Central Asian countries of Kyrgyzstan and Uzbekistan depend primarily on their rivers for a variety of purposes, such as agricultural needs, energy production processes, or water supply for the entire region. Unfortunately, the mobility of these rivers has been significantly affected by numerous factors, including climate change as well as recent human activities that have led to changes in land use patterns. Rivers in Bishkek in terms of mobility under current conditions are not attractive. Only some segments of Alamedin and Ala-Archa have been using by people as a place where they can spend their time. At least rivers can provide freshness and relaxation when there is water.



Figure 9. Rivers in mobility

The enhancement of river mobility has multiple benefits that can be realized with well-planned interventions. A significant opportunity for improvement involves developing a sustainable water management framework catering to diverse but essential stakeholder interests-including agriculture, clean energy production, and natural ecosystems preservation. Additionally, implementing good land-use practices like reforestation initiatives or appropriate urban planning measures can increase infiltration rates while reducing harm

caused by excessive runoff in affected regions around rivers. As an example of clean energy, we can consider the city of Tashkent in Uzbekistan. The canal we investigated has a hydroelectric power station.

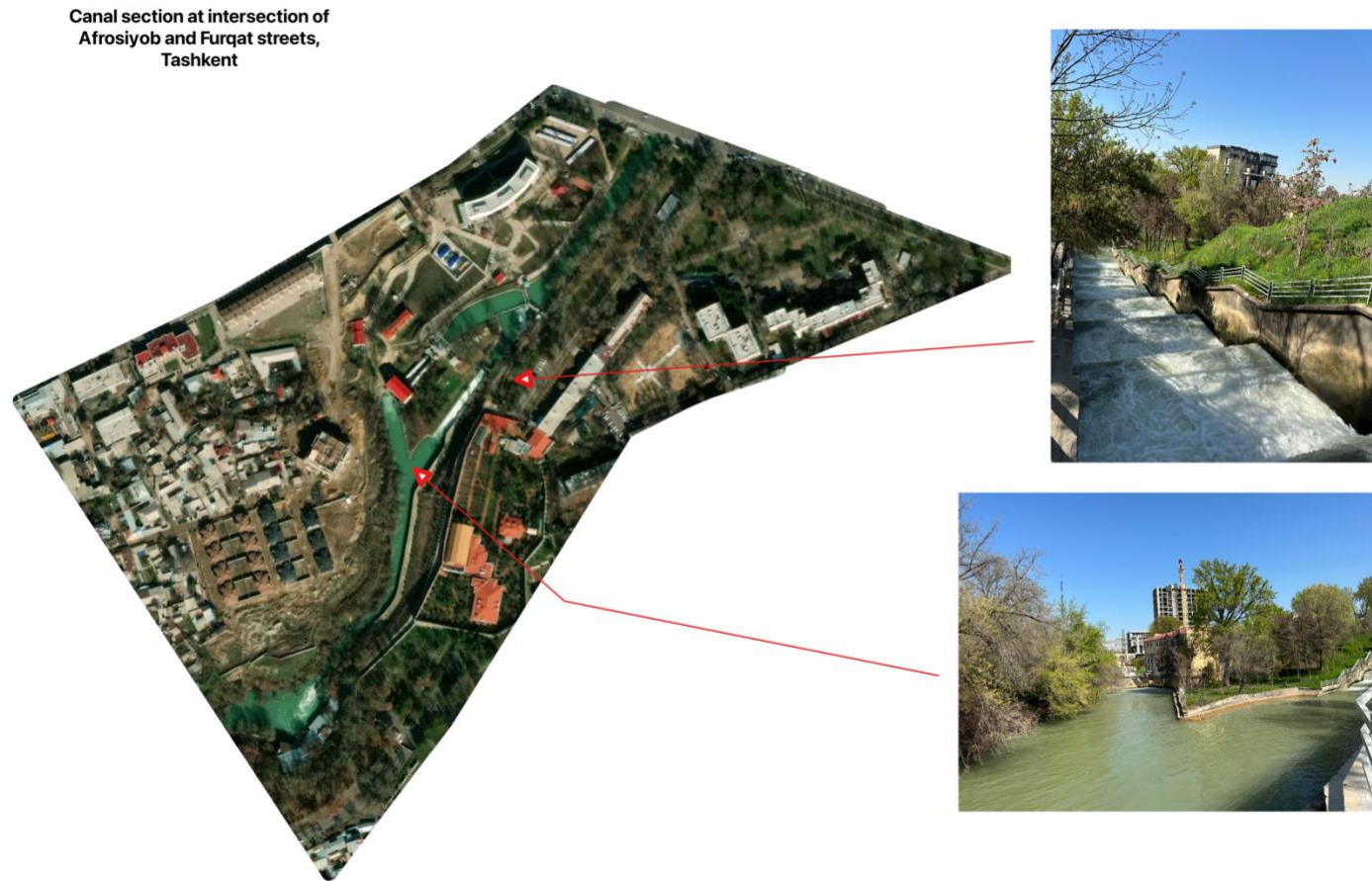


Figure 10. QGIS map of Tashkent showing Hydro Electric Power Station in canal

The river irrigates all the trees around it, which is an effective way to utilize it. Additionally, there exists a hydro station. It's not surprising that a large ladder has been constructed for the river stream, presumably to harness its energy. However, one drawback is that rivers can be occasionally hazardous. Although there are ramps on one side of the river, the other side, which is unused but more perilous, lacks clear ramps. There are no visible industrial or commercial buildings in the vicinity, except for a recently closed café.

### **Conclusion and Recommendations:**

The analysis of urban rivers in Bishkek and Tashkent provides valuable insights into the contrasting perceptions of locals and suggests potential strategies for enhancing their recreational value. Tashkent benefits from a network of canals within the city limits, creating a surrounding belt of water. In Bishkek, the Alamedin and Ala-Archa rivers connected by BChKs have the potential to create a similar effect. However, a notable difference is that Bishkek's rivers experience water scarcity not only during the summer but also due to water redistribution for irrigation and other purposes. These observations highlight the importance of considering local context and water management practices when exploring strategies for improving the recreational potential of urban rivers.

- To achieve prudent management of our natural resources raising awareness within local communities living near rivers is essential. The authorities must take steps towards conducting informative sessions aimed at educating people on how best they can conserve rivers while promoting sustainable lifestyles. Besides this motivating people to participate in conservation oriented endeavors like periodic river cleanup events can help keep our precious water systems thriving for generations to come.

- Given the problem of lack of water in Alamedin and Archa, it is essential to implement effective water management practices. Explore sustainable solutions that prioritize water allocation for both irrigation and recreational purposes, ensuring a reliable and constant flow of water in rivers throughout the year.
- Prioritize the creation of public spaces that not only provide an area for social interaction but also offer opportunities for various activities, promoting a healthy lifestyle and fostering political engagement. These spaces should be designed to accommodate diverse needs and preferences, encouraging community participation and enhancing overall well-being.
- Enhance the safety of rivers in Bishkek by installing necessary equipment such as fences and other safety measures along the riverbanks. This will help prevent accidents and ensure a secure environment for residents and visitors.
- Foster community involvement and engagement in the preservation and revitalization of urban rivers. Encourage local residents to participate in cleanup initiatives, awareness campaigns, and community events centered around the rivers, fostering a sense of ownership and pride.