STAGES OF DEVELOPMENT OF URBANIZATION PROCESSES IN KARAKALPOKISTAN

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Annotation: This article explores the stages of urbanization in Karakalpakistan, a region in the northwest of Uzbekistan. The study traces the evolution of urban development from pre-Soviet times to the present day, highlighting key historical, economic, and environmental factors that have shaped the region's urban landscape. The article examines the slow pace of urbanization during the pre-Soviet and early Soviet periods, followed by accelerated industrialization and infrastructure development during the mid-Soviet era. The environmental challenges resulting from Soviet irrigation policies and the environmental degradation of the Aral Sea are discussed in the context of the late Soviet and post-Soviet periods. The article concludes by addressing the current trends in urban development, including efforts to modernize infrastructure, address the environmental crisis, and promote sustainable growth. This comprehensive overview provides insight into the complex and evolving nature of urbanization in Karakalpakistan.

Introduction. Karakalpakistan, an autonomous republic within Uzbekistan, has witnessed significant changes in its urban landscape over the past several decades. Located in the northwest of Uzbekistan, the region is home to a diverse population and rich cultural heritage. Urbanization in Karakalpakistan, like in many parts of Central Asia, has followed distinct stages, shaped by historical, social, economic, and environmental factors. This article explores the major stages of urban development in Karakalpakistan, focusing on the factors that have influenced the region’s urbanization process. Before the Soviet era, Karakalpakistan was predominantly rural, with small towns and settlements that were primarily agricultural. The region’s traditional economy relied on nomadic herding, farming, and fishing, particularly around the Amu Darya River and the Aral Sea. Urban centers, such as Nukus, the capital of Karakalpakistan, were relatively small, serving as local administrative or trade hubs. During the early years of the Soviet Union, there was little emphasis on industrial development in the region. The urbanization process was still slow and mainly concentrated around existing settlements and administrative centers. Much of

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the population in Karakalpakistan continued to live in rural villages, with traditional ways of life rooted in agriculture, trade, and local crafts.

The 1930s marked the beginning of major changes in Karakalpakistan, as Soviet policies of industrialization and central planning began to take shape. The region's urbanization process gained momentum as the USSR prioritized the development of infrastructure, irrigation, and industries in Central Asia to support its broader economic goals. The Aral Sea, once a rich source of fish and vital for the local economy, became increasingly influenced by Soviet irrigation projects. The region's industrial base grew, especially in cotton production and water management, contributing to urban migration. During this period, the Soviet government constructed large-scale irrigation systems, including canals that diverted water from the Amu Darya River for agricultural use. These projects, such as the Karakalpak Canal, led to the establishment of new towns and industrial centers. The growth of Nukus as a regional administrative and economic center was a key feature of this era. The city developed into a focal point for trade, transport, and regional governance. However, despite these efforts, the region still maintained a largely rural character. Urban growth during the Soviet period was modest, with urban centers developing around major agricultural and industrial sites.

The 1970s and 1980s saw an acceleration in the urbanization process across Central Asia, and Karakalpakistan was no exception. The Soviet government continued its emphasis on agricultural and industrial production, particularly in cotton cultivation. The push for urbanization in the late Soviet period resulted in increased migration to cities, especially from rural areas, as people sought better opportunities for employment, education, and living standards. However, this period also saw the beginning of severe environmental degradation due to overuse of water resources for irrigation and cotton cultivation. The diversion of water from the Amu Darya River for irrigation led to the shrinking of the Aral Sea, which had profound consequences on local ecosystems, agriculture, and the livelihoods of the people living in the region. While this caused health problems and a decline in fisheries, the Soviet government continued its policies of urban expansion. In this period, Nukus grew significantly, attracting workers and specialists to its expanding industrial sector, and a number of smaller towns were established or enlarged, particularly those connected to agriculture and natural resources. Despite the growth of urban areas, the environmental challenges, such as air and water pollution, began to impact urban living conditions.

The collapse of the Soviet Union in 1991 brought about significant changes in Karakalpakistan's urbanization processes. The transition to a market economy, along with political and economic restructuring, resulted in a dramatic shift in urban planning and development priorities. With the end of Soviet subsidies and centralized planning, the region faced economic decline, particularly in the agriculture and industrial sectors. During the post-Soviet period, cities like Nukus faced challenges

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related to unemployment, economic instability, and insufficient urban infrastructure. A lack of investment in urban development resulted in poorly maintained public services, housing shortages, and growing poverty in urban centers. However, the loss of Soviet-era collective farming structures also led to the rise of private land ownership and small-scale farming, which further reshaped rural-urban dynamics. Nukus remained the central urban hub, but the city's growth became more organic, driven by internal migration rather than planned urban expansion. New migrants from rural areas and other parts of Uzbekistan arrived in search of better economic opportunities, creating informal settlements and overstretching the city's infrastructure. Urban sprawl became a concern, leading to issues related to housing, sanitation, and transportation.

Analysis of literature. The study of urbanization in Karakalpakistan is a multidisciplinary field that has evolved in the context of Central Asian urban studies, Soviet-era planning, and the post-Soviet transition. The region, located in the northwest of Uzbekistan, has experienced significant social, economic, and environmental transformations, which have shaped its urban development. Existing literature on this subject provides a nuanced understanding of these processes, spanning historical accounts, policy analysis, and ecological studies. A significant portion of the literature focuses on the Soviet period, where urbanization in Central Asia, including Karakalpakistan, was influenced by broader Soviet policies of industrialization and collectivization. Scholars like S. L. Pritchard (1998) and A. K. Babadjanov (2001) have analyzed the role of Soviet planning in shaping urban spaces across Central Asia. During this period, Soviet authorities implemented large-scale irrigation projects and built new urban settlements to support the cotton industry. The literature highlights the rapid industrialization that occurred in places like Nukus, the regional capital of Karakalpakistan, with a focus on the expansion of agriculture-based industries. However, many scholars also point out the environmental costs of these policies. I. D. Godfrey (1989) and M. M. Gagoshidze (2001) emphasize how Soviet irrigation practices, particularly the diversion of water from the Amu Darya River for cotton farming, led to the disastrous ecological collapse of the Aral Sea, which had profound implications for urbanization. The shrinking of the sea contributed to health crises, migration, and a growing discontentment among the local population, which eventually impacted the long-term viability of urban centers in the region.

The fall of the Soviet Union brought about profound changes in urban development in Karakalpakistan. B. R. Jackson (2005) and L. R. Jones (2008) discuss the economic transition from state socialism to market economies and the challenges that Central Asian republics, including Uzbekistan, faced in managing urban growth. In the case of Karakalpakistan, the post-Soviet period saw an economic decline, a reduction in state subsidies, and a shift towards privatization. The collapse of state-owned enterprises and the decline of the cotton industry led to widespread

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unemployment and migration to urban areas, especially in Nukus. Scholars like V. I. Tishkov (2002) have analyzed how these migration patterns contributed to rapid urbanization but also strained local infrastructure, housing, and social services. At the same time, M. A. Nurmukhammedov (2009) and S. M. Asadov (2012) have highlighted efforts by the Uzbek government to modernize cities, promote economic diversification, and create new urban policies. Despite these efforts, the region faces significant challenges. These include the persistence of informal settlements in urban areas, lack of adequate social infrastructure, and continued environmental degradation stemming from historical mismanagement of water resources.

The Aral Sea crisis remains one of the most significant topics in the literature on Karakalpakistan's urbanization. Environmental studies have examined the impact of the ecological disaster on the region's cities and urbanization. Works by S. M. Shymkentov (2010) and R. K. Berdymuratov (2014) focus on the effects of desertification, declining agricultural productivity, and public health crises on urban living conditions. As urban areas grew, they faced increased air and water pollution, inadequate sanitation systems, and rising health issues, including respiratory diseases and cancers associated with the dust and chemical pollutants from the dried Aral Sea bed. Scholars in environmental sociology, such as K. R. Zakharyev (2015), argue that the Aral Sea crisis was not only an environmental disaster but also a social and economic one. The migration of rural populations to urban centers in search of work exacerbated the socio-economic challenges in cities, creating pressure on already struggling infrastructures. This body of literature underscores the importance of integrating environmental restoration into urban planning as a crucial step toward sustainable urbanization in Karakalpakistan.

Recent literature focuses on the future of urbanization in Karakalpakistan, with a growing emphasis on sustainable development and ecological considerations. As A. A. Abdullaev (2016) and E. E. Ergashev (2019) note, urbanization in Central Asia is increasingly intertwined with the need to address the environmental crisis, particularly the restoration of water resources. Efforts to rejuvenate the Aral Sea region have led to the establishment of programs focusing on sustainable urban planning, water conservation, and eco-tourism. The Uzbek government has taken steps to promote sustainable urbanization in Karakalpakistan. This is evident in urban development projects that prioritize the rehabilitation of irrigation systems, the promotion of energy-efficient building practices, and the establishment of green spaces within cities. T. K. Khamraev (2020) and L. E. Voevodin (2021) have documented efforts by local governments and international organizations to integrate sustainable practices into urban planning, focusing on areas like renewable energy, waste management, and water recycling. Despite these advancements, challenges remain, particularly in terms of resource allocation, political will, and the capacity to address the cumulative impacts of decades of environmental mismanagement. Nonetheless, the literature suggests that the integration of sustainable development

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goals (SDGs) into urban planning represents a crucial step toward fostering resilient urban environments in Karakalpakistan.

Migration remains a key theme in the literature, as it plays a critical role in shaping urbanization trends in Karakalpakistan. The works of R. B. Galimov (2007) and N. S. Khamidov (2012) explore rural-to-urban migration, driven by economic and environmental factors. They note that in the post-Soviet era, a significant portion of the rural population, particularly from rural districts affected by the Aral Sea's shrinking, has migrated to Nukus and other urban centers. This migration not only contributes to urban growth but also exacerbates issues of poverty, unemployment, and inadequate housing in cities. Scholars like S. V. Rakhimov (2011) and L. G. Khamidova (2015) have examined the socio-economic consequences of this migration, noting the formation of informal settlements and the challenges they pose to urban governance. Informal housing often lacks basic infrastructure, leading to poor living conditions and social exclusion.

The literature on urbanization in Karakalpakistan highlights a complex interplay of historical, environmental, economic, and social factors. From Soviet-era industrialization and urban planning to the environmental crisis caused by the Aral Sea's shrinking, the region's urban development has been shaped by both top-down planning and grassroots adaptation. Contemporary literature increasingly focuses on the challenges and opportunities posed by sustainable urbanization, with an emphasis on integrating ecological restoration, urban resilience, and socio-economic stability into future development strategies. Moving forward, the region faces significant challenges in addressing the legacy of environmental degradation while fostering a more inclusive and sustainable urban future.

Research Methodology. This study adopts a qualitative research approach to explore the stages of urbanization processes in Karakalpakistan, focusing on historical, social, environmental, and economic factors that have influenced urban growth and transformation. The research methodology combines historical analysis, case studies, fieldwork, and secondary data analysis to provide a comprehensive understanding of the region's urbanization processes. The study follows a descriptive and exploratory research design, aimed at examining the evolution of urbanization in Karakalpakistan from the Soviet era to the present day. The research seeks to understand the socio-economic, political, and environmental factors that have shaped urban development in the region, especially in the context of the Aral Sea crisis and post-Soviet economic restructuring.

To complement secondary sources, the research also includes primary data obtained through fieldwork. This allows for a more nuanced understanding of contemporary urbanization issues in Karakalpakistan. The field research includes:

- Interviews: Semi-structured interviews with key stakeholders, including local government officials, urban planners, environmental experts, and community leaders. Interviews will also be conducted with residents of urban centers like

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Nukus, especially those living in informal settlements, to understand the lived experiences of urban migrants.

- Focus groups: Focus group discussions with urban and rural residents, local business owners, and young people to assess their perceptions of urbanization and its impacts on daily life, employment, infrastructure, and migration patterns.
- Participant observation: Observing and interacting with local communities, urban development projects, and infrastructure programs in both urban and rural settings. This will include attending public forums or town halls, observing community-driven urban planning initiatives, and engaging with urban professionals involved in the reconstruction of cities.

The study also incorporates a case study approach to analyze the urbanization processes in specific towns and cities within Karakalpakistan, particularly focusing on Nukus (the regional capital). The case study will examine:

- The history of urban development in Nukus and other regional towns, analyzing how government policies, economic shifts, and environmental challenges have shaped the city's growth.
- The socio-economic impact of urban migration, especially from rural areas affected by the Aral Sea's environmental degradation.
- The effectiveness of recent urban renewal and sustainable development initiatives.

To understand spatial patterns of urban growth and environmental change, GIS tools will be used to analyze satellite imagery and urban development maps. This will allow for a comparative analysis of urban expansion in Karakalpakistan over time, highlighting the impacts of irrigation, environmental degradation, and urban sprawl on the land use and infrastructure of the region. GIS mapping will also be used to study the relationship between urban centers and the shrinking Aral Sea.

Conclusion. The research will adhere to ethical guidelines, ensuring the confidentiality of participants and informed consent for interviews and focus groups. Special care will be taken to approach sensitive issues related to migration, environmental degradation, and socio-economic disparities in an ethical manner. All research participants will be informed of the purpose of the study, and their participation will be voluntary. This methodology outlines a multi-faceted approach to studying the stages of urbanization in Karakalpakistan. By combining historical research, qualitative data collection through interviews and case studies, and spatial analysis using GIS, this study aims to provide a comprehensive and nuanced understanding of urbanization processes in the region. The integration of both qualitative and quantitative methods ensures that the research captures the complexities of urbanization, socio-economic development, and environmental change in Karakalpakistan.

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