

## Article

# Improving Institutional Reforms in Housing and Communal Services

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**Abstract:** The research examines how institutional changes affect the housing and communal services (HCS) sector of Uzbekistan through improvements in service delivery along with regulatory framework and governance development. The sector continues to face multiple challenges despite major reforms that took place particularly during the digitalization period starting in 2017 since it experiences issues with inefficiencies and monopolies alongside outdated laws and restricted public-private joint efforts. This research uses monographic, comparative and statistical and system-analytical methods to undertake locally based systematic investigation of Uzbekistan's HCS sector while analyzing it both locally and globally and historically. Research shows that the sector developed into five distinct institutional periods starting from self-service models before colonial times and now exists as a modern technology-based system. The analysis reveals spatial variations in the distribution of housing, gas and water infrastructure and it investigates management flaws and validates the implementation of "Boshqaruv Servis" management system as an experiment. The research recommends better tariff regulations combined with digital tracking systems and laws that benefit from public-private business associations and community participation. Integrated legal and technological alongside financial and organizational reforms ensure sustainable HCS development when they support environmental targets through citizen involvement. The paper ends with strategic advice about decentralized governance along with digitization and smart system implementation and institutional training that represents a path for urban infrastructure system development.

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## 1. Introduction

Historically, up until the early 20th century, the system of housing and communal services in Uzbekistan had not yet evolved into a structured component of the national economic framework. The population primarily relied on natural water sources such as springs, wells, and flowing waters (canals and streams) for consumption. Urban neighborhoods typically maintained communal reservoirs of various sizes. During winter, residential homes in these areas were heated using only traditional methods such as the sandal (a type of brazier). Starting from the 1920s, urban beautification and infrastructure development initiatives were implemented in alignment with general urban planning strategies. In each district, specialized departments for communal service provision were established. Over the subsequent decades, the housing and communal services sector in Uzbekistan transformed into a significant economic branch, experiencing rapid growth driven by industrial expansion and accelerating population growth.

In recent years, extensive and targeted efforts have been undertaken to modernize urban and rural areas and create decent living conditions for the population. Notably, over the past three years, 155,000 housing units—covering a total area of 41 million square meters—have been commissioned. The number of multi-apartment residential buildings has doubled. As a result, the growing number of new housing developments and modern residential blocks has significantly increased the relevance and urgency of delivering quality communal services. According to recent anonymous surveys, 35% of residents in multi-storey apartment buildings expressed dissatisfaction with the communal services provided, while 65% deemed the performance of property management associations as ineffective. Furthermore, 18 trillion UZS have been allocated to improve living conditions across 7,794 rural settlements and neighborhoods, demonstrating the high significance of such investments in addressing existing challenges. In addition, efforts to enhance access to clean drinking water and improve internal road infrastructure have been bolstered by an additional allocation of \$300 million. These measures underscore the necessity and momentum for further institutional reforms within the housing and communal services sector [1], [2].

A series of institutional reforms are currently being implemented to improve the housing and communal services system in Uzbekistan. The government has designated the enhancement of services for multi-storey residential buildings and the modernization of the national housing stock as key priorities. Notably, in several regional centers and selected urban areas, qualified management and service companies have been established on a pilot basis, and their operations have proven to be more effective compared to traditional homeowners' associations. These companies are evaluated based on a performance rating system, whereby those delivering higher quality services are allocated additional properties for management. Moreover, the requirement for all management-service companies to operate on a 24/7 basis is gradually satisfying the population's growing demand for reliable and timely communal services [2], [3], [4].

In the Presidential Decree No. PF-5, issued by the President of the Republic of Uzbekistan, Sh.M. Mirziyoyev, on January 4, 2024, entitled "On Measures to Improve the Waste Management System and Reduce Its Negative Impact on the Environmental Situation," it is explicitly stated that "the predominance of the human factor in the payment process for sanitation services, the lack of a fully implemented centralized electronic payment system, and the absence of integration with interdepartmental platforms have contributed to an increase in accounts receivable for rendered services." This highlights the existence of systemic problems in the waste recycling and disposal segment of the housing and communal services sector. These shortcomings, in turn, necessitate the execution of comprehensive reforms, pointing directly to the institutional underpinnings of socio-economic relations. Timely improvements to these institutional frameworks are critical for identifying and implementing sustainable solutions to the aforementioned challenges [5]. The reform of the housing and communal services sector is a complex, multifaceted process that cannot be driven by the state alone. Rather, it demands coordinated efforts from the private sector, local communities, and international partners. The success of such reforms will inevitably lead to a more stable economy, improved living conditions, and enhanced environmental sustainability.

**Literature Review on the Subject.** Extensive research has been conducted on improving the institutional reforms of housing and communal services, and it can be observed that the topic has been studied by economists from various analytical perspectives. Economic literature, scholarly articles, and dissertations have examined the legal foundations of housing and communal services, the nature of social relations inherent to the system, its economic necessity, its role in elevating the population's standard of living, and the different structural forms of service provision. Moreover, studies have also assessed the impact of housing and communal services on the national economy. Below we present an analysis of these studies:

Maria Sisternas Tusell. In her article "Affordable housing in Europe: Innovative public policies that can effectively address the housing crisis", she put forward the view that the housing problem is an integral part of the city. The author arrives at the conclusion that cities were conceived as spaces intended for habitation. Later, with the formation of states, housing policy rose to the level of national policy, and the right to housing was recognized in almost all constitutions, and the housing crisis in large European cities was highlighted by the direct impact of rising apartment prices on the lives of residents. The second wave of territorial segregation in European cities highlighted the impact of global capital flows and the inability of municipalities to slow down the urbanization process [6], [7].

In their scholarly article entitled "Housing Inequality in Urban Areas of China: A Legacy of Socialist Institutional Mechanisms," Fan, K. and Iceland, J. investigate the persistence of housing inequality in Chinese cities by analyzing how the legacy of early socialist institutional arrangements continues to shape patterns of urban residential distribution. The authors explore the influence of individuals' positions within the work-unit (danwei) system and their broader socio-economic status on housing outcomes, particularly in the context of China's transition toward a market-oriented economy. Using data from a 2007 study of urban housing conditions in Nanjing, China, the author showed that although people's socio-economic status plays a very important role in providing housing to urban residents, housing inequality is also determined to some extent by their position in the system of labor units. They also showed that the impact of socialist institutional mechanisms on social inequality can be observed even several years after the transition to a market economy in societies that have transitioned to a market economy [8].

In the scientific article entitled "Institutional Basics of Tariffs in Housing and Communal Services: Cross-Country Analysis," the authors—Tamara N. Nerovnya, Natalya T. Oboimova, Valentina I. Rodionova, Alina P. Dovlatyan, and Vladimir A. Shapovalov—have examined and summarized the methods of tariff formation in the housing and communal economy of foreign countries, as well as substantiated the possibilities of using state marketing in tariff regulation both in Russia and abroad, and the main directions of its application. As a result, they have provided conclusions and forecasts on the further development of tariff formation, as well as recommendations on shaping the social consequences of this policy in the sphere of housing and communal economy. The authors have demonstrated that the institutional nature of the social practices in the housing and communal economy is related to ensuring the living standards of the population and to the search for ways to optimize the economies of industrial and post-industrial societies. They have shown that redefining the objective in the social practices of housing and communal services and redirecting social action toward the client constitutes a specific factor, which does not always correspond to the rational components of individuals' social behavior, and also consists of exploiting its irrational components. In addition, they have illustrated that a specific "soft" technologization is taking place within the social practices of housing and communal service provision. The price policy in the field of housing and communal economy, on the one hand, reveals the contradiction between large-scale services and subjects, which manifests in the democratization processes aimed at preserving and strengthening self-governance mechanisms, and, on the other hand, reflects the increase in prices and the low quality of the services provided, which is thoroughly explained in the scientific article [9].

In the scholarly article titled "Smart City: Governance Experiences and Development in the Russian Federation" by A.V. Chechulin, S.I. Shelonaev, and T.V. Smetanina, the general principles and models of "smart" governance are discussed, with an emphasis on analyzing existing international experiences. The article provides a comprehensive examination of the regulatory and legal frameworks, as well as the programmatic basis, underpinning the implementation of "Smart City" projects across the territories of the Russian Federation. Furthermore, it proposes a classification of program models based on

horizontal and vertical structures. The study also highlights the distinctive features of governance mechanisms adopted by regional entities in the course of implementing “Smart City” initiatives [10].

In her academic article entitled “Improving the Management System of Apartment Buildings in Uzbekistan”, Khanifa Odilovna Ikromova evaluates the effectiveness of state support mechanisms for the management of multi-apartment buildings, based on normative and legal documents adopted in the Republic of Uzbekistan. The article presents outcomes and conclusions related to the governance of multi-apartment housing. In addition, the author offers proposals and recommendations for enhancing the legislative framework governing the provision of communal services for multi-apartment residential buildings, as well as for advancing the process of demonopolization in this sector [11].

In the textbook “Economics and Management of Housing and Communal Services” by V. Yodgorov and D. Butunov, the subject matter, theoretical and practical issues of the communal services system are thoroughly examined. The work elucidates the organizational structure of the housing and communal services sector of the Republic, as well as the economic mechanisms underlying its operations. The textbook attempts to shed light on the ultimate objectives of the reforms and structural transformations currently underway in the housing and communal services sector of the Republic within the context of a market economy [12].

## **2. Materials and Methods**

The issue under investigation has been studied through the application of a range of methods, including primarily monographic analysis of foreign experiences, systems analysis, analytical and synthetic approaches, comparative techniques, statistical evaluation, and empirical research. These economic methods have played a significant role in uncovering the internal capacities for improving housing and communal services on an institutional basis, particularly in the context of the transition to a digital economy.

## **3. Results and Discussion**

The institutional reform of the housing and communal services sector represents a critical direction for Uzbekistan in achieving improved living standards for the population, enhancing energy efficiency, and attaining sustainable development goals. A historical review of the housing and communal services system reveals the existence of a long-standing and resource-rich tradition in this field within the country. Following the dissolution of the former Soviet Union, Uzbekistan, like other former republics, inherited a centrally planned, command-administrative model of management. Under this system, the main expenditures were covered by state budget allocations, and raw material resources were supplied through centralized distribution organizations. The introduction of market mechanisms across all sectors of the economy necessitated a comprehensive reform of the housing and communal services sector. The transition to a market-based organizational model of this system was primarily influenced by the following factors:

In the housing and communal services sector, all resources were distributed in a centralized manner. Even the newly constructed and operational housing stock was developed based on the population's demand for residential space and distributed according to a queuing system;

The operation and maintenance of the housing stock, as well as the provision of housing and communal services, were carried out by monopolistic state-owned enterprises. The prices for services rendered were set administratively and often failed to reflect actual costs, while the profits generated by these enterprises were centralized. In cases of financial loss, state subsidies were allocated to cover the deficits;

State enterprises and organizations were assigned responsibilities for providing housing to their employees and for maintaining the corresponding housing stock, which made it impossible to manage urban (territorial) communal services as a distinct and independent system;

The sector's core expenditures were financed from the state budget, and both revenues and expenditures were fully planned. The absence of economic incentives hindered the efficient operation of housing and communal services enterprises.

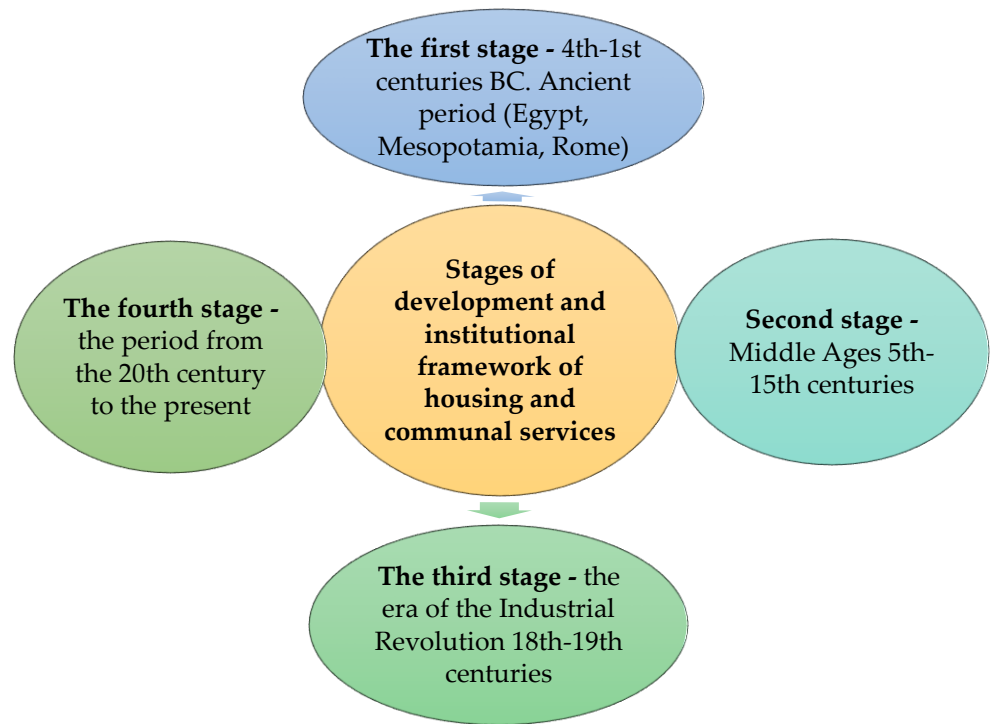
In 1991, the payment rate imposed on the population for the use of 1 square meter of housing stock constituted only 4–5% of the actual expenses. Additionally, more than 40% of the population were granted benefits related to housing and communal service payments [13]. This situation contributed to the deepening of a dependency mindset among the population [14]. The fact that housing and communal services were managed by local authorities, along with the service-providing enterprises and organizations, left the population with no real opportunity to influence the quality of services delivered.

When examining the global development stages of housing and communal services and their institutional reforms, it becomes evident that this process has deep historical roots. However, it was not until the 14th century that a fundamental transformation began to emerge in the provision of such services. In earlier periods, both rural and urban residents largely managed housing and communal services on a self-service basis, primarily aimed at fulfilling their personal needs. During those times, there were no normative documents regulating these services. By the 14th century, however, the provision of housing and communal services in major cities began to be undertaken by the state. From that point onward, these services were increasingly regulated on the basis of normative documents and official decrees.

In the course of our research into the historical development stages of housing and communal services, we have identified the existence of several scientific and methodological approaches to institutional transformation. We also found significant variations and distinctive features in the classification of stages and the formation of the institutional environment and structural frameworks (see Figure 1).

Figure 1 describes the chronological stages of development and the institutional framework of housing and communal services. It outlines four major historical periods: the first stage refers to the 4th–1st centuries BC, representing the ancient period characterized by developments in Egypt, Mesopotamia, and Rome; the second stage spans the Middle Ages, covering the 5th to 15th centuries; the third stage corresponds to the era of the Industrial Revolution in the 18th–19th centuries; and the fourth stage encompasses the period from the 20th century to the present day. Each stage reflects the evolving structural, technological, and social dynamics that influenced the management and provision of housing and communal services throughout history.





**Figure 1.** Stages of Development and Institutional Framework of Housing and Communal Services.

Based on the analysis of the data presented in Figure 1, it can be observed that each stage of the development of housing and communal services has been marked by its own distinctive transformations, which have laid the groundwork for the current stage of progress. While service delivery declined during certain periods, other stages witnessed notable growth. For instance, the third stage reflects a period of comprehensive development. Moreover, the institutional foundations of these services evolved concurrently with the progression of each stage. As a result of our examination of these phases, we arrived at the following conclusions:

The First Stage dates back to the 4th–1st centuries BCE and is characterized by the emergence of certain types of housing and communal services in ancient civilizations such as Egypt, Mesopotamia, and Rome. These included water supply systems, sewage infrastructures, public bathhouses, and urban lighting services offered to city dwellers. The management structure and institutional basis during this period were rooted in centralized state governance and religious institutions, which provided and regulated these services.

The Second Stage spans the Middle Ages, covering the 5th to 15th centuries, and may be regarded as a period of regression in the quality of housing and communal services. The main contributing factor was the feudal system, which prioritized wealth accumulation over the development of public utilities. As a result, hygiene standards declined significantly. Nevertheless, there were partial advancements, such as the construction of water pipelines, the establishment of communal services within market infrastructure, and the organization of waste removal and disposal activities in some urban centers. Institutionally, services during this period were regulated and delivered by feudal lords, religious organizations, and local communities, who enforced norms and practices through their own structures.

The Third Stage corresponds to the period of the first industrial revolution in the 18th–19th centuries. The rise of industrial production and rapid urbanization led to increased demand for communal services, thereby prompting significant development in

this sector. During this phase, services such as electricity supply, gas distribution, water provision, sewerage systems, waste collection, and disposal were significantly expanded to meet the needs of both the population and industrial entities. The institutional framework of housing and communal services in this stage was shaped by state authorities, local governments, and private companies. This period is also distinguished by the enactment of numerous legal documents—laws, decrees, orders, and codes—focused on the regulation, management, supervision, and administration of housing and communal services.

The Fourth Stage is widely regarded in economic literature as representing the post-20th-century reforms in the housing and communal services sector. Indeed, significant transformations have been observed in this area following the 20th century. Notably, the emergence of the “Socialist” and “Capitalist” models of service provision, differing approaches based on ideological perspectives, variations in ownership rights, and distinctions in competitive frameworks all characterize this era. The “Socialist” model was defined by full state provision of housing and communal services, the adoption of specialized “Housing Codes,” and service delivery through dedicated municipal organizations. In contrast, the “Capitalist” model is characterized by minimal government intervention, competitive private enterprises, management through public-private partnerships, and active involvement of private firms in operating rental housing services. During this stage, the expansion of multi-story residential buildings and the emergence of rental housing brought about the diversification of communal services, including electricity, gas, water supply, sewerage systems, waste collection and disposal, telecommunications, internet connectivity, and amenities that enhance residential comfort. In recent years, service quality has improved significantly due to the digitalization of housing and communal services, the introduction of energy-efficient technologies, the adoption of the Internet of Things (IoT), smart technologies, and an increased focus on environmental sustainability, which has also contributed to the conservation of non-renewable natural resources. Furthermore, the legal and regulatory framework governing housing and communal services has become far more sophisticated compared to earlier stages. Governance is now carried out through public-private partnerships and private companies, with the emergence of specialized service firms dedicated to managing communal services in multi-unit residential complexes.

In our view, the institutional foundations of the development of housing and communal services have been built upon cooperation among the state, local governments, the private sector, and civil society. Service provision, regulation, oversight, management, and ownership have been carried out based on this collaborative structure. A wide array of legal instruments—contracts, statutes, resolutions, decrees, codes, and laws—have served as a crucial foundation for ensuring the effective functioning of this sector.

Table 1. An analysis of the stages of development of housing and communal services across the world suggests that similar transformations have also taken place in our Republic. However, our findings indicate that the development of housing and communal services in the region has followed a distinct path shaped by specific institutional reforms. The implementation of the aforementioned reforms undoubtedly requires the improvement of the institutional foundations governing the operations of housing and communal service entities. In conducting this study, we examined the evolutionary stages of housing and communal service entities in order to gain a deeper understanding of their development trajectory. As a result, we were able to draw conclusions regarding the enhancement of their institutional framework. (See Table 1).

**Table 1.** Stages of Development and Institutional Framework of Housing and Communal Services in The Republic of Uzbekistan.

<b>№</b>	<b>Stages</b>	<b>Period</b>	<b>Institutional characteristics</b>
1	Pre-colonial stage	The period before 1920	<ul style="list-style-type: none"> <li>– Housing and communal services were provided by the population in the form of self-service;</li> <li>– Water facilities, lighting systems, fountains were organized and implemented at the local level (by themselves);</li> <li>– Waste disposal was carried out within the mahalla or household;</li> <li>– There was no legal norm for the provision of housing and communal services. On the contrary, it was carried out by elders based on social informal norms;</li> <li>– Heating was carried out through a system of sandalwood and brick ovens;</li> <li>– There was no official service.</li> </ul>
2	Colonial stage	1920-1991	<ul style="list-style-type: none"> <li>– Housing and communal services are provided by the state;</li> <li>– Prices for the services provided are subsidized;</li> <li>– social support for low-income families;</li> <li>– Housing is considered state property;</li> <li>– Communal infrastructure is established;</li> <li>– Standards for the provision of housing and communal services are developed.</li> </ul>
3	The initial stage of independence	1991-2000	<ul style="list-style-type: none"> <li>– Privatization of housing was carried out;</li> <li>– The quality of housing and communal services deteriorated;</li> <li>– New definitions of communal services were formed;</li> <li>– Housing and communal services were reorganized into a monopoly.</li> </ul>
4	Market reform phase	2000-2016	<ul style="list-style-type: none"> <li>– Owners' associations were established in the provision of housing and communal services;</li> <li>– Private services were established in the provision of communal services;</li> <li>– Housing construction for the population was activated;</li> <li>– A billing system for making utility payments was established;</li> <li>– Legal regulations for the provision of housing and communal services were improved.</li> </ul>
5	Digitalization and modernization phase	From 2017 to the present	<ul style="list-style-type: none"> <li>– Electronic systems for housing and communal services were established;</li> <li>– The activities of some entities providing housing and communal services were de-publicized;</li> <li>– A public-private partnership program was introduced for the provision of communal services;</li> <li>– “Smart” meters were introduced for housing and communal services;</li> <li>– The scope of housing construction for the population was expanded;</li> <li>– The ministry of communal services was established;</li> <li>– Management service companies were established instead of homeowners' associations for the provision of housing services;</li> <li>– Laws, resolutions and decrees were developed to effectively organize housing and communal services.</li> </ul>

An analysis of the data presented in the above table leads us to conclude that the housing and communal services sector in the Republic of Uzbekistan has been developing gradually. It is also evident that the most significant institutional transformations have



taken place during the fifth stage of reforms. For instance, in the initial post-independence phase, key reforms were introduced through the adoption of the Law of the Republic of Uzbekistan "On the Privatization of the State Housing Stock", the Civil Code, and the Housing Code [15]. These legal acts laid the foundation for the development of market-oriented mechanisms in the housing and communal services sector. During the second stage of post-independence reforms, the focus shifted toward the utilization of private housing stock and the establishment of a private system of service providers. This phase was marked by the development of legal and institutional frameworks regulating the establishment and operation of Homeowners' Associations (HOAs). The rights and responsibilities of the state, HOAs, their members, and other stakeholders were defined in the Law of the Republic of Uzbekistan "On Homeowners' Associations", thereby formalizing the basis for community-led management of residential properties. The third stage of reforms, beginning in 2016, ushered in a new phase of transformation in housing and communal services. In particular, the 2017–2021 Action Strategy for the Development of the Republic of Uzbekistan emphasized key priorities such as increasing access to communal services, expanding water supply networks, introducing modern energy-saving technologies, and improving the availability of clean drinking water in rural areas. It also highlighted the need for new energy generation capacities and improved access to fuel and energy resources. A notable development during this period was the adoption of the Law of the Republic of Uzbekistan "On the Management of Multi-Apartment Buildings" on August 6, 2019. This legislation played a critical role in addressing a range of systemic issues and enhancing regulatory clarity. Furthermore, recent advancements in the sector, such as the widespread implementation of "smart" metering systems, the use of digital platforms for monitoring and managing communal services, and the development of "Smart" and "Safe" cities, reflect a fundamental shift toward modern, technology-driven service provision. Additionally, the introduction of waste recycling initiatives marks a substantial transformation in the ecological and operational efficiency of housing and communal services.

Table 2 As a result of recent reforms in our country, changes are being made in the housing and communal services sector, which can be seen in the level of housing provision to the population, and the provision of communal services such as electricity, natural gas, and water supply, see Table 2.

**Table 2.** The Level of Provision of The Population of The Republic with Housing and Communal Services [11].

Name of the regions		Level of provision of the population with housing and communal services								
		Housing, sq.m./person			Natural gas supply (%)			Water supply (%)		
		2012	2023	Difference (+,-)	2012	2023	Difference (+,-)	2012	2024	Difference (+,-)
Republic of		13,2	19,9	+6,7	87,3	45,1	-42,2	65,3	72,4	+6,7
Karakalpakstan										
Andijan		12,3	18,5	+6,2	72,1	58,1	-14,0	87,7	90,9	+3,2
Bukhara		14,3	20,4	+6,1	82,3	62,6	-19,7	90,2	73,2	-17,0
Jizzakh		13,2	17,5	+4,3	71,4	52,9	-18,5	80,6	70,4	-10,2
KashKadarya		12,6	17,8	+5,2	65,9	22,6	-43,3	82,3	59,4	-22,3
Navoi		21,5	22,1	+0,6	78,2	63,3	-14,9	73,6	76,3	+2,7
Namangan		13,8	18,3	+4,5	73,2	59,2	-14,0	85,1	82,7	-2,4
Samarkand		14,6	17,6	+3,0	87,1	56,7	-30,4	81,4	75,4	-6,0
Surkhandarya		12,6	18,8	+6,2	60,1	24,4	-35,7	79,7	62,9	-16,8
Syrdarya		14,5	19,3	+4,8	88,4	48,6	-39,8	94,4	86,9	-7,5
Tashkent		15,7	18,9	+3,4	89,6	67,1	-22,5	99,2	79,4	-19,8

Fergana	14,1	18,6	+4,5	76,4	56,4	-20,0	89,4	79,4	-10,0
Khorezm	18,7	19,4	+0,7	91,4	61,1	-30,3	64,1	90,4	+26,0
Tashkent city	17,5	15,8	-1,7	97,2	68,6	-28,6	99,2	97,7	-1,5
By republic	14,9	18,5	+3,6	80,0	56,8	-21,2	83,7	80,1	-3,6

According to data from the Statistics Agency under the President of the Republic of Uzbekistan, as of January 1, 2023, the average residential space per capita across the country amounted to 18.5 square meters. This indicator increased by 0.3 square meters compared to the same period in 2022. The lowest figure was recorded in Jizzakh region, where the average living space per person was 17.5 square meters. These statistics highlight the disparities in housing availability across different regions of the country, underscoring the need to account for territorial characteristics in housing construction and distribution.

While recent official data on the regional distribution of access to natural gas remains limited in open sources, our research shows that in 2010, approximately 83.5% of all households (apartments) in Uzbekistan were supplied with natural gas. However, by 2020, this figure had dropped to 55.5%. For instance, in Kashkadarya region, the share of homes connected to the gas supply fell from 68.6% in 2010 to 22.6% in 2020. In 2023, the total volume of natural gas consumption in Uzbekistan amounted to 47.5 billion cubic meters. However, detailed data on regional distribution of this consumption is not publicly available. A decrease in domestic gas production, combined with cold weather conditions—particularly in the winter months—has led to interruptions in gas supply to the population. For example, in January 2023, gas refueling stations were temporarily shut down due to abnormally low temperatures, with available supplies being redirected to meet residential demand. Previously a net exporter of natural gas, Uzbekistan became a net importer of gas during 2023–2024. This shift can be attributed to increased domestic demand driven by rapid housing construction and the expansion of industrial sectors. As a result, additional resources are now required to meet internal consumption needs.

It can also be witnessed that there have been recent changes in the provision of clean drinking water to the population in the republic. In particular, according to information published in April 2024, the highest rate was recorded in Tashkent (97.7%), while the lowest rate was recorded in Kashkadarya region (59.4%). In general, the level of centralized drinking water supply of the population in the country as of January 2024 was 77.2%. There are differences in the level of drinking water supply between regions, which is associated with the development of infrastructure and geographical factors. The government plans to increase this indicator to 81% by the end of 2024. We can also see that by January 2025, this indicator has reached 80.9%. As a result of analyzing this data, we can conclude that in recent times, the demand for clean drinking water in the republic has been increasing due to population growth, the construction of multi-storey buildings, the development of production and services. Also, due to global warming and environmental degradation, the decrease in clean drinking water sources is also affecting. However, in recent times, new water facilities and water stations have been built in the republic in order to provide the population with clean drinking water, which is a positive situation, but there are still shortcomings. For example, we can see that there are situations where the population and legal entities lack skills in using water resources, allow waste, and use clean drinking water for irrigation purposes. This, in turn, leads to a further decrease in the decreasing sources of clean drinking water and, as a result, a decrease in the quality of water supply utilities.

In our opinion, the utility service demonstrates the need to implement reforms that include the use of water supply resources-saving technologies, improving its legislative framework, transferring service activities to full-fledged digital platforms, improving the skills of employees, improving the skills and culture of the population in using water

resources, depriving water supply enterprises of state management, and reviewing the definitions of fees for legal entities for using resources from an operational perspective.

Table 3 The analysis of the above indicators by regions of the Republic ensures the accuracy of the research results. For this purpose, we studied the level of provision of housing and communal services in the Samarkand region, which is the object of our research. As a result of our research, we found that the provision of services is not evenly distributed across the regions of the Samarkand region, see Table 3.

**Table 3.** Level of Provision of Housing and Communal Services in Samarkand Region.

Name of the regions	Level of provision of the population with housing and communal services								
	Housing, sq.m./person			Natural gas supply (%)			Water supply (%)		
	2012	2024	Diffe-rence (+,-)	2012	2023	Diffe-rence (+,-)	2012	2024	Diffe-rence (+,-)
Samarkand city	11,1	27,8	+16,7	88,3	91,5	+3,2	92,9	93,7	+0,8
Kattakurgan city	12,5	16,2	+3,7	93,8	90,3	-3,5	77,3	86,1	+8,8
Akdarya district	15,5	21,6	+6,1	89,8	90,4	+0,6	89,3	91,4	+2,1
Bulungur district	12,9	22,5	+9,6	78,1	79,2	+1,1	83,6	81,2	-2,4
Jomboy district	14,1	17,4	+3,3	88,9	90,7	+1,8	83,1	82,9	-0,2
Ishtikhan district	12,8	18,6	+5,8	85,2	87,3	+2,1	58,2	53,4	-4,8
Kattakurgan district	13,7	19,2	+5,5	86,2	81,1	-5,1	64,2	67,2	+3,0
Kushrabot district	11,4	18,8	+7,4	78,1	72,8	-5,3	60,8	65,4	+4,6
Narpay district	14,9	18,0	+3,1	91,1	91,3	+0,2	86,0	90,1	+4,1
Payarik district	14,1	16,7	+2,6	86,4	83,2	-3,2	68,2	68,3	+0,1
Pastdargom district	12,6	17,1	+4,5	89,9	86,1	-3,8	86,0	90,1	+4,1
Pakhtachi district	16,7	19,5	+2,8	92,4	92,6	+0,2	95,2	93,4	-1,8
Samarkand district	24,2	28,4	+4,2	96,4	91,9	-4,5	79,3	83,7	+4,4
Nurobod district	17,8	21,3	+3,5	75,2	75,8	+0,6	95,0	95,3	+0,3
Urgut district	10,9	17,5	+6,6	86,8	82,3	-4,5	90,5	89,8	-0,7
Taylak district	18,6	20,8	+2,2	90,6	92,8	+2,2	93,2	93,6	+0,4
Samarkand region	14,6	20,0	+5,4	87,1	85,2	-1,9	81,4	81,5	+0,1

The level of housing provision for the population of Samarkand region is gradually developing in proportion to the population growth. In particular, in 2012, the level of housing provision for the population of the region was 14.6 square meters per capita. The level of housing provision for the population in Samarkand region as of January 1, 2023 was an average of 19.4 square meters of housing space per capita. As of January 1, 2025, we can see that this indicator has reached 20 square meters.

According to the researcher in the field of economics, K.K. Khannarov, "Although a number of achievements have been made in the field of providing housing for the population in Uzbekistan, there are still some difficulties in this area. This situation creates certain instability in the process of providing housing for the population. Currently, legal frameworks are being created for providing housing for the population and systemic reforms are being implemented. Nevertheless, the role of state authorities is of particular importance for the effective regulation of these processes" [10] and as a solution to this problem, the researcher turns to foreign experience in order to mitigate the speculative situation in the real estate market, which is associated with the construction of the housing market in the country by private contractors. In this regard, he specifically touches upon the experience of the Turkish TOKI (Toplu Konut İdaresi) organization. Given that this organization is a leader in implementing state policy in the field of housing and urban

development, it will give its recommendations on implementing this experience in our country. We believe that the application of this experience can be effective. However, given the strong current social policy in our country, we can see that there is no need. Because we have low utility bills for housing and communal services, and support for the population in social packages, on the one hand, and low taxes paid for housing on the other.

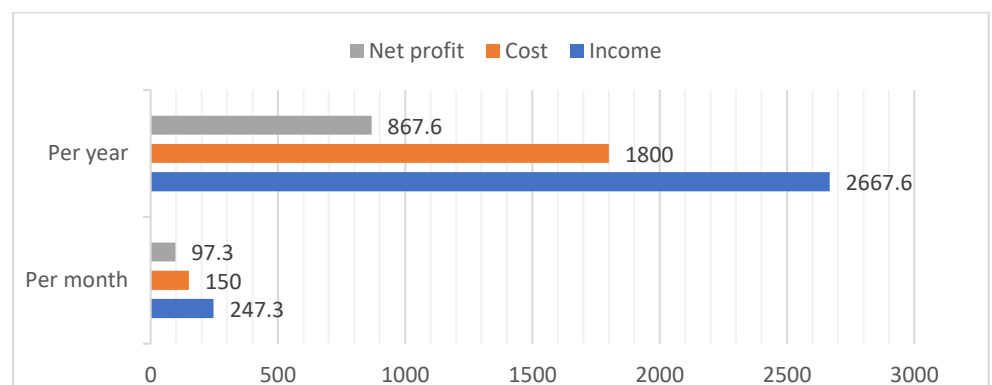
The level of provision of natural gas utilities was 87.1% in 2012, and by 2023 this figure will be 85.2%. The dynamics of the decrease, in accordance with the previous period, was -1.9%. One of the main reasons for this can be attributed to the recent construction of multi-storey buildings, the increase in the number of industrial enterprises and the increasing demand for gas from vehicles. However, along with the increase in demand for gas resources, the volume of liquefied gas production is increasing in order to gasify the population and production entities living in ungasified areas. However, we can see that the legislative norms to justify its socio-legal relations are not sufficiently developed. This, in turn, leads to an increase in bureaucratic obstacles and corruption in the industry.

The indicators of providing the population with centralized water supply utilities in 2012 were 81.4%, and in 2024 they were 85.5%. We can see that the growth dynamics increased by 0.1% compared to the previous period. We can see that water supply utilities have a decreasing dynamics over time. The presence of many obstacles in the system also affects this decrease. For example, we can cite the reasons for the monopoly form of management, bureaucratic obstacles, and the population's improper use of clean drinking water.

However, along with these shortcomings, work is being carried out in the region to develop housing and communal services. In particular, we can mention the preferential investments of many international financial institutions, the digitization and modernization of the sector, and the establishment of new service enterprises. One of these is the company "Boshkaruv Servis", which currently provides utility services to multi-storey buildings in the Karasuv settlement of the Samarkand region. It is distinguished by its efficient operation, high quality of service, mobility, speed, and profitability for the enterprise in servicing multi-storey buildings, see Figure 2.

Figure 2. describes the annual and monthly financial performance of the "Boshqaruv Servis" company located in the Karasuv settlement of the Samarkand region for the year 2024, measured in million soums. The chart compares three financial indicators: Income, Cost, and Net Profit. On a yearly basis, the company recorded an income of 2,667.6 million soums, costs amounting to 1,800 million soums, and a resulting net profit of 867.6 million soums.

On a monthly basis, the corresponding figures are income of 247.3 million soums, costs of 150 million soums, and a net profit of 97.3 million soums.



**Figure 2.** The Amount of Expenses of The "Boshkaruv Servis" Company in The Karasuv Settlement of The Samarkand Region in 2024, (In Million Soums).

The company "Boshkaruv Servis" provides effective housing and communal services to 6105 multi-apartment apartments located in the Karasuv area. This situation serves to increase the level of provision of the population with housing and communal services. When analyzing the company's activities, the amount of revenue for the provided communal services per month was 247.3 million soums, the amount of expenses was 150.0 million soums, and the amount of profit was 97.3 million soums. In 2024, the amount of revenue for housing and communal services was 2667.6 million soums, the amount of expenses was 1800 million soums, and the profit for 2024 was 867.6 million soums.

Based on the above indicators, our analysis and research, we believe that it is necessary to gradually implement reforms in the housing and communal services system of our republic and focus the main essence of the reforms on the following:

- instilling a sense of ownership among citizens, privatization of state-owned housing stock, organization of the activities of housing and communal services entities within the framework of PPP (public-private partnership), improvement of the package of legal and regulatory documents granting the right to ownership of housing property;

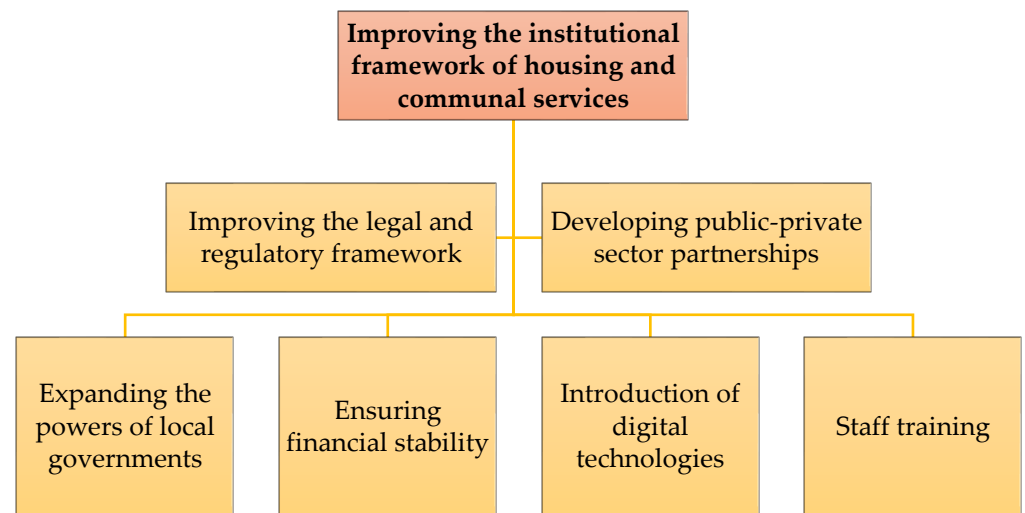
- denationalization of enterprises and organizations providing housing and communal services, regulation of natural monopoly in the field of housing and communal services, development of pure competition between service providers, gradual elimination of the operation of the housing and communal services sector at the expense of state budget funds, gradual reduction of the amount of subsidies allocated to the sector;

- improving the management of the housing and communal services sector, increasing the activity of homeowners in the maintenance and repair of residential buildings, establishing associations and partnerships of owners based on the principle of self-management;

- gradually equipping the housing and communal services sector with full-fledged innovative, "green" and digital technologies. It is possible to increase the efficiency of housing and communal services in the country by implementing payment systems, security issues, creating comfort, management, control, monitoring, self-energy supply, mass use of solar panels and developing its legal framework. We can also improve the efficiency of the sector, its institutional framework by strengthening management, legal and regulatory framework, financing and cooperation between participants (see Figure 3).

Figure 3. describes the key strategies for improving the institutional framework of housing and communal services in the republic. At the core is the goal of enhancing institutional capacity, supported by two main directions: improving the legal and regulatory framework and developing public-private sector partnerships. These core strategies further branch into specific actions, including expanding the powers of local governments, ensuring financial stability, introducing digital technologies, and staff training. The figure highlights a comprehensive and multi-level approach to reforming the sector by combining legislative, financial, technological, and human resource development measures.





**Figure 3.** Ways to improve the institutional framework for housing and communal services in the republic.

We can achieve this by developing the areas shown in Figure 3 to improve the institutional framework for housing and communal services. To do this, we need to implement strategic reforms in the republic, which can be done as follows:

Review existing laws, resolutions, decrees and regulatory documents in line with the requirements of the times, introduce regulations regulating the quality, cost, and transparency of housing and communal services, and improve the legislative framework that encourages the activities of the private sector;

Attract private investors to the sector, organize services on a contract basis, introduce outsourcing systems, and create a favorable environment for the implementation of projects based on public-private partnerships;

Grant local authorities and self-government bodies the authority to monitor the quality of communal services provided to apartment buildings, neighborhoods, and industrial enterprises, and encourage the participation of the population in infrastructure management;

To formulate definitions of housing and communal services based on the socio-economic basis of the population's ability to pay, to establish funds to support infrastructure projects and repair, modernization, and renovation of the housing stock on the basis of subsidies and preferential loans;

To gradually introduce the digital concept of "smart communal services" in the republic, to form a platform for digital payments, electronic monitoring, billing, and receiving complaints;

To organize training and retraining courses for managers, employees, and workers in the system, and to promote content aimed at improving the culture of service provision;

We can improve the institutional foundations of housing and communal services by establishing cooperation with consumers of housing and communal services, accepting their opinions and suggestions, monitoring the quality of services on the basis of public meetings, conducting social surveys and organizing open days, and implementing reforms to ensure transparency among consumers.

As a result of the institutional research conducted, we have identified three main tasks among the goals of housing and communal services reforms:

Improving the quality of the system of providing communal services to the population and existing services, increasing the efficiency of the housing and communal services system in the conditions of market relations;

Increasing the efficiency of budget expenditures to meet the needs of citizens to provide housing and communal services;

By regulating, digitizing, improving and developing the legislative framework for the provision of communal services, we can further develop the activities of the sector in our republic.

#### 4. Conclusion

Based on the findings of our research, the enhancement of the institutional framework for housing and communal services in the Republic represents a multifaceted and intricate process. This complexity arises from the necessity to accurately evaluate the influencing factors, which include the sector's operation under a state monopoly framework, the suboptimal performance of service-providing enterprises, the persistence of bureaucratic barriers and instances of corruption in certain service categories, the inadequacy of existing legislation and codes in meeting requisite standards, insufficient financial resourcing for the sector's activities, and the absence of comprehensive digital transformation. In our assessment, overcoming these impediments demands the implementation of systemic reforms across the Republic, the formulation of state programs and strategies, the refinement of the legislative framework, the allocation of preferential financial resources, and the sustained enhancement of workforce competencies. To this end, we have developed the following proposals and recommendations to strengthen the institutional foundations of housing and communal services:

Firstly, to advance the institutional framework of housing and communal services, it is critical to refine the organizational-economic mechanisms and legislative base through a collaborative model involving the state, private sector, foreign investors, and the population. This approach necessitates fostering a robust partnership to ensure systemic improvements in service delivery and governance structures.

Secondly, the integration of renewable energy sources into the provision of housing and communal services should be prioritized. This includes the construction of energy-efficient housing equipped with energy-conserving technologies, the deployment of solar panels for illuminating corridors, entrances, and heating systems, and the establishment of a legal framework to underpin these initiatives. Furthermore, in the construction, reconstruction, and modernization of multi-story buildings, the adoption of Building Information Modeling (BIM) and Internet of Things (IoT) technologies should be institutionalized. Preferential policies should also be introduced to incentivize the production, maintenance, and importation of such technologies.

Thirdly, institutional reforms in waste collection, recycling, and disposal should be pursued at the regional level, adopting a "state-entrepreneur-population" perspective. The integration of digital and innovative technologies is essential to enhance the efficiency, transparency, and overall quality of waste management services within the sector.

Fourthly, to ensure the stable and reliable functioning of the housing and communal services system, specialized guarantee agencies should be established to attract private capital, complemented by regional and local budgetary support. These agencies would facilitate budget-support measures, enabling the mobilization of additional financial resources to sustain and expand service infrastructure.

Fifth, to mitigate the monopolistic tendencies of communal unitary enterprises, it is advisable to transform these entities into open joint-stock companies. This restructuring would cultivate a competitive environment, thereby enhancing the quality and accessibility of housing and communal services for the population while addressing inefficiencies inherent in monopolistic practices.

These recommendations are designed to systematically address the identified challenges, ensuring that the housing and communal services sector operates with efficiency, transparency, and alignment with contemporary economic and technological

standards, while preserving the institutional and contextual integrity of the proposed reforms.

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