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**'PLANNING IN A CONTEXT OF LIMITED SOVEREIGNTY: THE IMPACT OF THE BRI
INITIATIVE ON SPATIAL PLANNING IN UZBEKISTAN'**

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Abstract:

The research examines how the One Belt and One Road Initiative (BRI) affects spatial planning in Uzbekistan, while accounting for its limited national sovereignty. In the era of globalization and growing dependence on international investment, the research explores how BRI participation influences national spatial planning approaches, together with governance systems and decision-making power.

Using qualitative methods that combine document analysis, case studies, and expert interviews, the study reveals mechanisms by which BRI affects spatial development. Findings show that the initiative creates multiple governance levels that unite national entities with regional bodies and international partners.

The initiative preserves official state control, but external funding priorities now decide the actual decision-making processes, resulting in a hybrid system of "shared sovereignty." The BRI supports modern infrastructure development and digital transformation of planning practices, but creates potential risks through uneven spatial development, long-term dependence on external factors, and environmental challenges.

Uzbekistan implements adaptation through the standardization of international norms in line with national strategic aims, the promotion of sustainable development, and the integration of the BRI into national planning systems. The research sets up a new theoretical framework that unites urban studies with geopolitics and regional development while providing practical solutions to enhance institutional coordination, public participation, and policy resilience during transnational infrastructure projects.

KEYWORDS:

Belt and Road Initiative (BRI); Spatial Planning; Limited Sovereignty; Urban and Regional Planning; Spatial Governance; Infrastructure development; Transnational Projects; Institutional Transformation; Multi-level Governance; Sustainable Development; International Investment; Regional Integration; Policy Adaptation;

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Chapter 1: Introduction

1.1 Introduction to the research context

According to the 20th National Congress of the Communist Party of China held in October 2022, the One Belt One Road Initiative (BRI) keeps its crucial role in China's foreign policy. One of the main aims of this initiative is to advance infrastructure projects overseas and thus strengthen its influence in a global context. As in recent times, the BRI introduced vast infrastructure projects across Central Asia, significantly affecting the economic policies of participating states, affecting their spatial planning practices, often leading to both opportunities and challenges. Along with other challenges, the limitation of sovereignty has attracted particular attention.

This thesis aims to explore the impact of the One Belt One Road initiative (BRI) on spatial planning in participating countries of Central Asia, with a particular focus on Uzbekistan. It aims to analyze the context in which this influence is exerted and to examine whether limitations on sovereignty arise within the framework of spatial planning in Uzbekistan.

To achieve this goal, the study sets several objectives, including:

- Deep understanding of the concept of the BRI initiative, its goals, strategy, and key projects; its impact on spatial planning in general and in the Central Asian region in particular; study specifically the BRI projects implemented in Uzbekistan and their impact on spatial development.
- Determine the forms and mechanisms through which the initiative influences spatial planning; assess whether there are signs of limiting the sovereignty of Uzbekistan within the framework of the implementation of the BRI projects, in the context of spatial planning.
- Analyze what changes have occurred in the framework of spatial planning in Uzbekistan under the influence of the BRI projects; identify potential opportunities and challenges for the country in this context.
- Develop several recommendations for the country's adaptation to these challenges in the context of spatial planning.

1.2. Significance and contribution to the field

This research fills the gaps in the study of the relationship between global processes and national interests in the field of spatial planning and contributes to the development of an interdisciplinary approach, combining urban studies, geopolitics, and regional studies.

In the context of globalization and rapidly growing dependence on investment and modern technologies, the problem of national sovereignty in the field of spatial planning is becoming especially relevant in the modern world. The results of this study can help urban planners and politicians to better comprehend the processes of integrating international projects and cooperation in spatial planning while preserving national sovereignty and interests. Moreover, understanding of the BRI initiative's impact on spatial planning in developing countries can contribute to a fairer, thoughtful, and balanced distribution of territories, which will ultimately affect the quality of life of citizens.

Additionally, the research develops theoretical knowledge through its proposed framework, which explains how worldwide initiatives modify existing spatial planning frameworks. Methodologically, the research develops an interdisciplinary method to study geopolitical elements together with spatial aspects. And empirically, the research contributes to existing knowledge by presenting fresh findings about developing nations that have received limited attention in spatial planning studies of global integration.

1.3 Research questions and hypotheses

The research within this thesis addresses the following key questions:

1. How do national spatial planning policies change under the effect of external influences, in particular the BRI initiative?
2. How and to what extent does international cooperation within the BRI initiative limit national sovereignty in spatial planning?
3. How do countries adapt to external influences and balance between international and national interests in the context of spatial planning?

In this respect, the following specific research questions and hypotheses were formulated:

Research Questions:

In what context does the BRI initiative influence spatial planning processes in Uzbekistan?

What changes in spatial planning strategies and priorities have been caused by the implementation of the BRI projects in Central Asia?

What mechanisms are used within the BRI framework to influence the spatial development of partner countries?

What potential challenges to Uzbekistan's sovereignty arise in connection with the implementation of projects within the framework of the BRI?

Which elements of spatial planning may be limited by international obligations under the BRI?

How can countries in the region adapt to the BRI influence and find a balance between international and national interests in spatial planning?

Main hypothesis:

The BRI initiative has significant impacts on spatial planning in Central Asia, including Uzbekistan, leading to changes in national development strategies and possibly limiting aspects of national sovereignty.

Additional hypotheses:

Hypothesis 1: The BRI projects in Central Asia are changing traditional approaches to spatial governance by strengthening international participation in planning processes.

Hypothesis 2: The BRI partially limits national sovereignty, specifically in infrastructure planning and resource distribution.

Hypothesis 3: Uzbekistan's participation in the BRI calls for a revision of national priorities in spatial planning to meet international commitments.

Hypothesis 4: The BRI initiative creates opportunities for infrastructure modernization but comes with risks of long-term dependence on external investors and environmental impacts.

Hypothesis 5: Uzbekistan can successfully adapt to external influences if it integrates international standards while maintaining a focus on national interests and sustainable development.

Table 1. Matrix Linking Research Questions to Hypotheses

Source: Author's own elaboration.

Research Questions	Main Hypothesis	H1	H2	H3	H4	H5
RQ1: Context of BRI's influence on spatial planning	✓	✓				
RQ2: Changes in strategies & priorities	✓	✓	✓	✓		
RQ3: Mechanisms within BRI	✓	✓		✓		
RQ4: Challenges to sovereignty	✓		✓			
RQ5: Elements limited by international obligations	✓		✓	✓		
RQ6: Adaptation strategies	✓			✓	✓	✓

1.4 Thesis Structure

The sequence of the thesis chapters will enable us to conduct a thorough investigation into how the BRI Initiative influences spatial planning in Uzbekistan.

The foundations of the research, including the problem statement, aim objectives, and relevance of the study, are outlined in the introductory chapter. The reader will also find justification for the selection of the topic and the statement of the problem in this section.

In Chapter 2 of the literature review, there are theoretical frameworks, concepts, and definitions related to the main concepts of this study: the concept of spatial planning, the theoretical frameworks of conducting spatial planning in limited sovereignty, and the BRI initiative with its global influence on spatial planning.

The methodological section addresses the nature of the investigation, ways of gathering information, selection of cases, and methods employed, such as documents, interviews, questionnaires, and GIS. Furthermore, it also includes ethical considerations, the context of the research, and the disadvantages concerning the selected methodology.

The next section is devoted to a brief overview and retrospective analysis of the spatial policy of Uzbekistan over the past 30 years, including its main strategies, mechanisms, and actors.

A substantial part of the work is devoted to the case study, which is the main component of this research and captures the detailed effects of the BRI Initiative on the spatial planning of Uzbekistan.

There is an emphasis on the investigation of the spatial development of key projects realized in the framework of the BRI. The last chapter ends with a brief recapitulation of notes made throughout the paper, drawing key aspects, and covering the most efficient assumption concerning the possible 'value' of this research, as well as the value of the development of spatial planning under limited sovereignty. At the end of the work, the weaknesses of the thesis are highlighted, and ways of further development are provided. The work ends with a list of glossaries, references, and appendices.

Chapter 2: Literature Review

This literature review aims to examine the complex relationship between limited sovereignty and spatial planning in the context of the BRI initiative and build some evidence for understanding these concepts in conditions heavily influenced by external powers.

Based on examples from some European and post-Soviet countries, including Chinese initiatives directly as the BRI, this review analyses the phenomenon of external power's ability to limit sovereignty in shifting national priorities, influencing local governance, and most importantly, reshaping the spatial planning policies and practices.

2.1 Spatial planning

Conceptual understanding of spatial planning

The concept of spatial planning has evolved greatly over time, particularly in Europe, where it has transitioned from a predominantly regulatory function into a broad, comprehensive concept. (Janin Rivolin, 2017) Nowadays, it can be generally characterized not as the policy of ordering spaces but as a specific social construct featuring the establishment and application of certain techniques of social order and cooperation directed towards allowing and ruling the collective action for the use of space. Land, in this view, must be seen not as an isolated physical unit but as something integrated into the whole of society with its rules, institutions, and socio-economic characteristics. (Larsson, 2006).

Initially, spatial planning was primarily concerned with land-use control, focusing on allocating space for various public purposes based on a legal framework that included binding zoning laws. According to Janin Rivolin (2008), this traditional model, labelled as a "conformative" approach, was characterized by its preventive nature and complete reliance on legal frameworks that assign rights for land use and spatial development. Another feature of this model was conformity when planners were convinced that all property development projects needed to conform to public strategies and standards of authority.

The conformative model of a spatial planning system still largely prevails in the world, especially in southern European countries such as Italy, Spain, Greece, and, to some extent, France and Portugal. (Berisha et al., 2021). These countries still demonstrate a commitment to the 'urbanism tradition', which is expressed in a strong architectural aspect and a concern with urban design that was driven through rigid zoning and codes ensuring compliance with the public interest. (Faludi, 2001).

In more recent years, spatial planning was described by scholar Umberto Janin Rivolin as a form of "institutional technology, the term refers to a complex pool of legal devices, administrative bodies, and technical cultures through which states regulate spatial governance and planning. (Janin Rivolin, 2012).

The institutional factor of spatial planning in Europe is also associated with "multi-level governance," which implies the distribution of decision-making authorities within different scales of government from the supranational to the local level. (Williams, 1999) Particularly, the fundamental role in policymaking among all levels of governance is attributed to the national level, which is significantly important for the whole spatial planning process. (Tewdwr-Jones et al., 2000)

Historically, the next leap in the evolution of the spatial planning system occurred when a different type of spatial planning system was established in the UK, Ireland, and some Commonwealth countries in the post-war period. (Booth, 2007). This new system was labeled as a "performative model," which, in contrast to the rigid conformative model, relied on more adaptive strategies in the development of spatial planning based on indicative and non-binding zoning. (Janin Rivolin, 2017).

This approach was characterized by the fact that public authorities were exempted from legal obligations and reserved the right to consider each proposed development project individually, adjusting new laws and rights only to those projects, ensuring them to perform towards the plan of public spatial strategy rather than conform to it. (Healey & Williams, 1993) But despite its obvious advantages, such as flexibility and adaptability, in contrast to the previous model, some challenges were expressed in uncertainty, risk of discretionary decisions, and higher administrative costs (Booth, 2007; Faludi, 1987; Tewdwr-Jones, 1999)

Over time, the societal complexities in some European countries required reforming existing spatial planning systems to adjust to the new era of globalization and solve decision-making difficulties that emerged due to consequent spatial planning reorganization. This has led to the formation of a new model of spatial planning systems that combines the main advantages of the conformative and performative models. The new model was labeled as the "neo-performative model," which was spread among the north-western European countries as Denmark, Germany, Sweden, and the Netherlands. (Muñoz Gielen & Tasan-Kok, 2010)

The neo-performative model is characterized by basing on binding zoning, like the conformation model, but neutralizing the preventive approach of legal plans. In other words, binding land-use

rules of spatial development are not pre-assigned but are only approved as the “final balance” after negotiations with developers/landowners have occurred. (Janin Rivolin, 2017).

The other distinction and advantage of the model is “public value capturing,” which implies the ability of public institutions to make developers pay for the benefit of society, for instance, for the construction of public infrastructure, facilities, and buildings, public roads, space, and affordable social housing. One more positive side is expressed by stability in urban markets in the long-term perspective due to the elimination of speculative purposes. (Lundström, Fredriksson, & Witzell, 2013)

However, the neo-performative model also has its challenges, which refer to the complexity of implementing this comprehensive and integrated approach since achieving sustainable development outcomes requires substantial reforms and a balance between flexibility and effective public control.

Spatial planning: a comparative approach

In the next phase of spatial planning development, the new interpretation of spatial planning has been firmly embedded, no longer merely as physical land use regulation but as a multi-dimensional concept combining the coordination of socio-economic and multi-level governance.

This stage illustrated the significant impact of the European Union through its policies as a key player on the European continent. The process of the European Union's influence on spatial planning development, also known as “Europeanization in spatial planning”, is represented by three main factors of influence.

The first factor is EU legislation, which includes EU directives and regulations that have an indirect effect on spatial planning. The most influential and significant of the regulations is environmental legislation, followed by energy and competition legislation. The second factor refers to the impact of European Policies, where the Cohesion policy is considered to be the biggest trigger for the modification of spatial planning. This policy not only provides investment to less developed regions but also imposes governance reforms that affect states' national and regional planning practices.

The urban and territorial cooperation policies appeared moderately rather than strongly influential. Last is the impact of EU discourse, including EU mainstream development strategies such as the Lisbon Strategy, Europe 2020, or Urban Agenda. Their impact on national spatial planning systems was characterized as highly or moderately significant and reported as constant through time. (Cotella, 2021)

Overall, Europeanization presents a process through which the EU indirectly shapes the spatial planning of European countries by promoting multi-level governance, European integration goals, and cross-border cooperation. Spatial planning in the context of Europe now should respond not only to the local and national interests of the state but also to the regional and supranational interests of the European Union. This means that the concept of spatial planning not only transformed from the narrow physical concept of territorial governance of each country but also became a pan-European mechanism where European integration goals, regional economic development, and social cohesion are balanced. (Cotella and Dabrowski, 2021)

Cotella, in his study, presents a broader theoretical framework for understanding the European Union's influence on spatial planning, discussing three channels of European influence: structural, instrumental, and discursive. The structural influence occurs when domestic legislation is adjusted due to the transposition of EU directives and regulations. National laws are adjusted to correspond with EU standards, resulting in changes in governance practices and policy frameworks.

An instrumental influence refers to the implementation of providing incentives for more cohesive regional policies and territorial cooperation. And finally, discursive influence expresses a "discursive integration" whereas EU concepts and ideas are used by Member States' actors to pursue their agenda and vested interests. This influence is particularly significant in shaping the discourse around spatial planning, as EU ideas are incorporated into national debates and policy-making processes. (Cotella, 2021)

Consequently, the European states must decide whether to adapt to the new rules of the game or resist these influences, putting their national traditions, capacities, and socio-political contexts to the fore. As a result, the approach to spatial planning varies across Europe, and each European state's system has its particularities and characteristics. This fact is well reflected in the study of European scholars, who classify European countries according to their approach to spatial planning.

This typology identifies 5 types of approaches based on the capacity of public control of spatial development and the balance between state and market influence. These types include: (A) State-Led Systems, (B) Market-Led Neo-Performative Systems, (C) Conformative Systems, (D) Proto-Conformative Systems, and (E) Misled Performative Systems.

Type A is characterized by the domination of public interest in spatial planning systems, typical for Northern and Western countries; in contrast, type E represents Cyprus, Malta, and Poland, with the prevalence of market interests.

Type B illustrates a mixture of state and market interests, with a slight market prevalence distinctive between Baltic and Central-Eastern states, whereas type C is identified by mainly market-driven development with varying degrees of public control, which is common for Southern and Eastern Europe. However, type D is based on hierarchical and state-led ideals, and spatial development is driven primarily by market interests. This is usual for six non-EU Balkan countries. (Erblin Berisha, Giancarlo Cotella, Umberto Janin Rivolin & Alys Solly, 2020)

Spatial planning and external factors

A decade before the typology, a study by European authors Nadin and Stead (2008) introduced a comparative analysis of spatial planning models across various European countries based on the classification (4 ideal models) proposed by the EU Compendium of Spatial Planning Systems and Policies (1997). In formulating this comparative analysis, consideration was given to the influence of external factors, such as transnational learning, cross-border cooperation, and processes of Europeanization.

Even though the European Union actively promoted European transnational spatial planning initiatives across the whole of Europe, it is difficult to argue that imposing a single unified spatial planning model for all European states was impossible due to too significant differences in the national, traditional, and socio-cultural contexts of member states. However, a comparative analysis of the evolution of spatial planning in Europe by Nadin & Stead demonstrated that most European models were subject to convergence and harmonization.

Table 2. Typology of spatial planning models

Source: Adapted from Nadin & Stead, 2008

Author/Year	Comprehensive integrated	Land use regulation	Regional economic	Urbanism	Common law / British	Germanic	Napoleonic / Napoleonic codes / East European
Davies et al. 1989	—	—	—	—	English	—	DK, DE, FR, NL / —
Newman, Thornley 1996	Nordic: DK, FI, SE	British: IE, UK	—	—	—	Germanic: AT, DE	Napoleonic: BE, FR, IT, LU, NL, PT, ES / East European
CEC 1997	AT, DK, FI, DE, NL, SE	IE, UK (and BE)	FR, PT (and DE)	GR, IT, ES (and PT)	—	—	—
Farinós Dasi 2007	AT, DK, FI, NL, SE, DE, (and BE, FR, IE, LU, UK), BG, EE, HU, LV, LT, PL, RO, SI, SV	BE, IE, LU, UK (and PT, ES), CY, CZ, MT	FR, DE, PT (and IE, SE, UK), HU, LV, LT, SK	GR, IT, ES, CY, MT	—	—	—

Comprehensive Integrated Approach: The model emphasizes horizontal and vertical integration of policies across sectors and jurisdictions, aiming for a cohesive planning system that coordinates various policy areas.

Regional Economic Planning Approach: The model focuses on economic development at the regional level, often involving strategic planning to boost regional economies and address disparities.

Urbanism Tradition: the model emphasizes the design and aesthetic aspects of urban planning. It often involves detailed regulatory frameworks to guide urban development and maintain cultural heritage.

Land Use Planning Tradition: the model has a narrower focus, primarily on regulating land use changes. Decisions are often made as proposals arise, rather than through comprehensive, legally binding plans.

This line of research is particularly important in the context of this thesis, as it explores key questions about how planning systems adjust to external influence and transnational cooperation, which relates to the main topic of this paper. Therefore, we propose considering it in more detail.

Thus, the paper argues that European national spatial planning systems can change significantly under the influence of certain factors. They usually do not completely lose their diversity and uniqueness but only become more complex and acquire similar features; that is, they strive for convergence and harmonization. It also turned out that the national social model greatly influences what the spatial planning system will become under the influence of external factors. This suggests that planning systems often reflect a society's underlying social and cultural values.

The next important aspect that determines how spatial planning in the country will be organized is power distribution among various levels of government. For example, if the power in the country is more decentralized, this leads to more localized decision-making and flexibility in planning outcomes. Most often, decentralized power gives municipalities greater influence and independence in decision-making, which makes spatial planning decisions more tailored to local needs and conditions. (Vink, van der Burg, 2006)

Conversely, under centralized power, the state uses a top-down approach in planning, which makes the system rigid but very coordinated between various policy areas. However, the study found that various countries have different variations in the organization of governance and distribution of power, which means that spatial planning systems will vary significantly from one country to another. Other such internal factors that affect the appearance and organization of a country's spatial planning system include social and cultural context, legal and institutional frameworks, public and private sector roles, historical and path-dependent factors, reform, and policy changes. (Nadin & Stead, 2008)

In contrast, external factors have been identified that influence the convergence of different planning systems and make them more like each other. Such factors include not only European integration efforts and the European Spatial Development Perspective but also global economic competition, international agreements, transnational learning, and cooperation. Since we have considered the influence of European factors in detail above, we propose focusing on factors related to global competition and transnational cooperation. (Healey and Williams, 1993)

Primarily, the need to respond to the challenges of global competition is one of the most influential drivers of convergence, as countries are forced to adjust their spatial planning systems

to be more competitive on the global stage, attract more investment and tourists, and other benefits, which encourages the alignment of planning practices across borders.

Secondly, countries often face common challenges such as climate change, global competition, and sustainable development, which force countries to cooperate and coordinate their efforts to solve common problems. In turn, such cooperation raises awareness and promotes mutual transnational learning among countries. In exchanging knowledge and practices, it leads to adaptations of their national planning for each other to achieve common goals.

Also, the article provided a thorough comparative analysis of spatial planning systems in countries such as England and the Netherlands, which, despite the influence of approximately the same external factors, adapted their spatial planning systems in quite diverse ways. Such conclusions indicate that the evolution and adaptation of spatial planning systems depend not only on external influences but also on the internal features and characteristics of each specific country, which, when interacting and integrating, allow the creation of new, unique spatial planning models, which are sometimes difficult to classify based on existing standard models. (Nadin & Stead, 2008)

For example, in the Netherlands, one of the key internal factors is centralized power, but at the same time, governance is collaborative based on a consensus-driven model, which is traditionally characteristic of the Dutch government system. This kind of system implies a high degree of integration between various levels of government, which gives rise to a spatial planning system that welcomes multi-level coordination based on national coherence. As a result, the Dutch planning system has evolved towards a comprehensive-integrated model that follows national interests and adheres to an integrated sustainable approach to spatial development.

In contrast, in England, the policy is market-oriented with strong autonomy of local powers, coupled with a liberal social model and minimal intervention by national and regional authorities, which has traditionally prevailed. As a result, this system, under the influence of external factors and over time, has evolved into a spatial planning model that is more focused on a regulatory control approach than comprehensive spatial coordination. This model is characterized by its flexibility and is easily adaptable to local market needs, but due to the lack of effective coordination mechanisms between various levels of government, it is of a regulatory nature rather than an integrated approach with broader strategic national goals.

Choosing from one of the four ideal models, this system is closest to the land-use management model, but is not identical to it, since after significant reforms in 2004, due to the influence of transnational learning, particularly ideas coming from the ESDP (The European Spatial

Development Perspective), spatial planning mechanisms began to form in England to ensure a coordinative strategic framework and engage stakeholders more effectively. (Allmendinger, P., & Haughton, G., 2007)

As a result, new instruments emerged during the reforms that strengthened regional strategic planning capacity and allowed local authorities in different metropolises to interact more effectively with each other to achieve common national goals.

Thus, because of this comparative analysis of two countries by Nadin & Stead, it is possible to trace some patterns of certain variables' influence among internal factors on the development of spatial planning systems even in conditions of similar external influence. One of these variables is power distribution within the country. For example, countries with centralized power tend to adapt their spatial planning systems towards a more comprehensive-integrated approach, while countries with decentralized power often align with the land-use management model.

However, under the influence of external factors such as transnational learning, the land-use management model can also change to some extent towards a more comprehensive strategic approach, although maintaining its traditional foundations.

This fact explains the following conclusion that, despite the obvious differences between the new models of spatial planning in England and the Netherlands, there are aspects of convergence between both. Among these aspects, the main ones are multi-level governance, public participation & stakeholder engagement, and focus on sustainability as a guiding principle.

In conclusion, spatial planning has undergone substantial evolution, especially in Europe, shifting from a narrow regulatory practice to an encompassing mechanism with social, economic, and environmental dimensions. Originally, spatial planning focused primarily on land use, employing a rigid system of binding zoning laws designed to control and allocate spaces for specific public purposes. This early model, known as the "conformative" approach, prioritized preventive measures, relying entirely on legal frameworks that strictly controlled development rights.

Today, this conformative model still holds sway, especially in Southern Europe, where countries like Italy and Spain maintain a commitment to the 'urbanism tradition,' favoring strong architectural design and urban codes. Over time, spatial planning developed further, with scholars such as Janin Rivolin describing it as an "institutional technology" - a set of legal devices and administrative bodies through which states regulate spatial development.

This period brought in "multi-level governance," an essential feature in Europe, where decisions cascade across supranational, national, and local scales, although the national level remains a

cornerstone of the process. Another significant change that occurred in the UK in 1968 is the emergence of the “performative model,” which showed a sharp contrast with the rigidity of the conformative approach. This model focused on adaptive, flexible strategies in planning, relying on indicative and non-binding zoning.

However, this performative model, while adaptable, faced challenges such as discretionary decision-making risks and higher costs, which critics pointed to as flaws. As globalization progressed, European countries reformed their spatial planning frameworks, creating what is now the “neo-performative” model, which combines elements of the previous systems.

Europeanization further affected spatial planning, particularly through EU policies promoting multi-level governance, cross-border cooperation, and alignment with integration goals. Spatial planning in Europe now encompasses local and supranational interests, transforming from a state-focused framework to a more complex one shaped by EU policies on environmental and economic cohesion.

This European influence is seen in cases like the Netherlands and England, where internal factors such as governance style interact with external pressures to produce distinct planning models. In the Netherlands, centralized power combined with a collaborative approach facilitates a comprehensive-integrated model that emphasizes coordination across government levels. Meanwhile, England, with a decentralized structure, adheres to a land-use management model that prioritizes flexibility and market responsiveness.

Thus, the evolution of the spatial planning concept in the example of Europe was analyzed, and its types, features, varieties, as well as goals and objectives, were determined. Today, spatial planning is a comprehensive, complex, integrated concept that implies a multi-level process designed to meet not only local needs but also consider broader national and supranational objectives. Moreover, it was revealed that the spatial planning system is not static and can change under the influence of various external factors, such as globalization, challenges of the global economy, and international cooperation.

2.2 Spatial planning in limited sovereignty

In this chapter, based on the analysis of key scientific works, our study will attempt to discuss the relationship between spatial planning and sovereignty, including the following issues: the evolutionary transformation of the concept of sovereignty, what external factors can limit state sovereignty, how the limitation of sovereignty affects the effectiveness of spatial planning, and through what mechanisms spatial planning can be implemented in the context of limited state sovereignty.

Concept of limited sovereignty

Primarily, it is fair to discuss the concept of sovereignty itself and how it has evolved.

The traditional definition of sovereignty was formulated by Jean Bodin and Thomas Hobbes, which meant a combination of powers that ensured stability by pooling resources and establishing a clear hierarchy of responsibilities.

In a more modern understanding, sovereignty is defined as a structural power mechanism and institutional authorities that are attributed to the people, and in modern societies, which are executed through representative bodies such as an elected parliament. (Lange, Pütz und Herlo, 2023).

Historically, sovereignty has been viewed as a purely territorial concept that geographically secured the absolute power of the state within its territory according to the Westphalian model. This power was viewed as unlimited and completely independent of external interference. (Osiander, A., 2001)

This model was taken as a basis by Alexander Murphy (1996), who, in his theory, suggests considering sovereignty as a political-territorial ideal designed to organize international systems. He emphasizes that sovereignty is not so much an objective reality as an ideal. However, he emphasizes that the real practice of sovereignty rarely correlates with its ideal standard. In the real world, close economic, social, and political interactions between countries lead to the fact that states lose their formal sovereignty and become incapable of effectively managing their territories.

Thus, he describes the paradox of modern sovereignty, when on the one hand, sovereignty remains the basis of the territorial organization of the world, and on the other, its meaning is eroded under the influence of globalization.

In contrast, John Agnew (2005) proposes to abandon the notion of territorial and static sovereignty altogether and puts forward an alternative understanding of sovereignty as more distributed and contextual. In place of Murphy's two notions of sovereignty, formal (de jure) and actual (de facto), Agnew argues that actual sovereignty is all there is.

Criticizing the outdated Westphalian model of sovereignty, he formulated his concept of "regimes of sovereignty" that explains the impact of globalization on state sovereignty, with traditional states sharing their power with international organizations, supranational structures, and global networks. (Agnew, 2005)

Agnew (2005) notes that sovereignty is not a state but a process in which power is distributed among various levels of governance (local, regional, national, and global). In other words, the sovereignty of any state is, in fact, limited by external factors; only the degree and type of limitation vary. For example, some states have a high degree of control and autonomy, while others share control with supranational institutions, as in the European Union. And in conflict regions, sovereignty can be contested and fragmented. He categorized these differences into his four regimes of sovereignty.

The ability of a state to effectively exercise its authority over its territory despite external factors is what Agnew (2005) calls "effective sovereignty."

Lange (2023) introduced an additional definition of sovereignty that goes beyond territoriality and claims that sovereignty is a more dynamic and fluid concept rather than a fixed one. As he argues, sovereignty depends on circumstances, settings, and interactions among various actors at a particular moment. He used the term "Situational sovereignty" to describe such sovereignty. For instance, a state may temporarily expand its control over specific resources or processes in times of crisis, like a pandemic or natural disaster, to respond to the situation or work with international organizations, while keeping only limited power over internal resources.

As Lange (2023) points out, situational sovereignty is particularly important in the era of digitalization. Modern technologies, such as digital platforms and data management systems, allow states and other institutions to react quickly and adapt their governance systems to changing circumstances.

Control over digital data flows and digital infrastructure is of particular importance for spatial planning decisions, which ensures digital sovereignty. For example, planning transport networks and urban or energy infrastructure requires access to extensive and accurate geographic and socio-economic data, which must be under the control of the state.

The state can control vital transportation, smart cities, and other urban data systems if it has completed digital sovereignty. If these systems are subject to outside influences, they can not only restrict but also halt spatial government activities (Mao, 2024). Like Lange and Agnew, George Kyris rejects the idea of absolute and static sovereignty and proposes a concept of dynamic sovereignty, which sees sovereignty as a process that is always evolving based on interactions with other actors, internal political circumstances, and outside influences. But unlike Agnew and Murphy, he emphasizes how a state's international recognition shapes its sovereignty, even though he admits that states may not have access to full de facto sovereignty even if they have full formal sovereignty (effective sovereignty). (Kyris, 2022)

In his work, Kyris (2022) elaborates on the study of more complex models of sovereignty, using the example of countries such as Kosovo, Taiwan, and Palestine, which have only partial recognition and have only some elements of independence. For example, they have their institutions of governance, but are not allowed to fully participate in international organizations due to insufficient international recognition. Partial recognition and contested territories not only hinder international interaction but can also affect the ability to conduct domestic coherent policies, including spatial planning.

Of particular interest is the concept of "fluid sovereignty" proposed by Mason and Khawlie. Its main idea is that sovereignty based on territoriality ceases to be effective when natural resources cross the borders of several states, such as rivers, groundwater, or ecosystems. In this context, a state must share governance with other states through which these resources flow. For example, the Hasbani River in Lebanon, which is part of the Jordan River Basin, requires joint governance between Lebanon, Israel, and Syria. In this case, sovereignty becomes "fluid", i.e., adaptive and mobile. (Mason and Khawlie, 2016)

In the joint management of transboundary resources, conflicts can often arise due to resource limitations. In this case, to ensure successful cooperation, including in the field of spatial planning, states are recommended to create multi-level management systems that include not only states, but also international organizations, regional institutions, and local actors. (Mason and Khawlie, 2016)

Diana Davis's (2020) research on fragmented sovereignty focuses on the context of urban spaces in which traditional state authority is displaced or supplanted by local non-state actors such as cartels, gangs, or organized crime. In her work "City, Nation, Network: Shifting Territorialities of Sovereignty and Urban Violence in Latin America" (2020), she analyzes the sovereignty of Latin American countries and concludes that state sovereignty is significantly weakened and "fragmented" in conditions of social inequality, urbanization, and violence.

Such conditions most often apply to developing countries, to regions with a high degree of crime and organized crime, where cartels, gangs, or other local communities effectively seize power in their territories. As a result, sovereignty is fragmented, and the state loses its influence, only partially maintaining control over the territories. The author cites examples such as the favelas of Brazil or the districts of Mexico City, where criminal groups establish their own rules, functioning parallel to the existing authorities. Most often, such forms of power are supported by violence, which becomes part of everyday life and significantly complicates the management of urban spaces.

Each of the above theories reflects distinct aspects of the limitations of sovereignty, but at the same time reveals its single essence. Therefore, based on the analysis of these concepts, it can be concluded that limited sovereignty can be identified as a multi-level and changeable state that depends on various contexts and interactions, in which the power of the state can be limited by both external (globalization, supranational structures, transboundary natural resources, digitalization, etc.) and internal factors (local actors, social inequality, internal challenges, etc.). Further, our research will be focused on external factors that affect sovereignty in the framework of spatial planning.

Concerning spatial planning, these approaches demonstrate that in conditions of limited sovereignty, all factors, internal and external, as well as transboundary dynamics and local governance challenges, should be considered.

Regardless of whether we are talking about working with dynamic or fluid sovereignty or to combat fragmented urban governance, spatial planning must be flexible, inclusive, and consider the specific characteristics of each context.

External factors influencing sovereignty in spatial planning.

The transformation of sovereignty is particularly relevant for spatial planning, where, as discussed in the previous chapter, decisions depend on the interaction of many actors.

Based on the studies reviewed above, our research will try to classify external factors influencing sovereignty in spatial planning.

According to the level of their impact, factors can be divided into global, supranational, regional, and local. Each of these levels causes its own specific, unique challenges and opportunities for spatial planning. (Nadin, V., & Stead, D., 2008)

At the global level, the influence comes from transboundary international processes, cooperation, and integration of states. When states unite to coordinate actions in solving common problems and challenges or achieving common goals.

These factors include globalization in the general sense, which includes all kinds of integration processes between states, such as economic, social, cultural, digital, and other interactions. Some of the main factors include economic integration, climate change, and digitalization.

In the field of spatial planning, this means that decisions on urban planning, territorial development, and land use are increasingly influenced by multi-level authorities and outside state actors, including, in addition to local and national, also global players, such as transnational corporations, international financial institutions, infrastructure projects, international organizations, and others. (Healey, P. (2006), Booth, P. (2007))

These global actors most often exercise their power on the territory of other states using methods of economic dependence through investments, financial subsidies, and loans. (Booth, P. (2007)). One striking example is the Chinese BRI initiative, which includes the construction of infrastructure, transport corridors, and economic zones covering Asia, Africa, Europe, and even Latin America. A more detailed analysis of its impact on spatial planning will be devoted to the next subchapter of this work.

The supranational level of influence is very clearly seen in the example of the European Union, where the power structure is built in such a way that member states share a significant part of their powers with supranational bodies such as the European Commission, which leads to the creation of "divided sovereignty" (Mardanov, 2023). Although such a structure offers many advantages in the form of deeper regional cooperation and coordination, it can significantly limit national sovereignty.

In the field of spatial planning, supranational institutions of the European Union can shape their policies through regulatory and funding mechanisms. For example, EU cohesion policy, which requires compliance with common priorities such as environmental sustainability and sustainable development, can limit national autonomy in the field of spatial planning in cases where national priorities do not coincide with collective goals. Additionally, in addition to cohesion policy, two more aspects of influence in the EU structure can be distinguished: legislation and discourse. (Cotella, G., & Dabrowski, M. 2021)

In legislative terms, EU directives and regulations such as the "Habitats Directive" or the "Renewable Energy Directive" can indirectly influence spatial planning by establishing social and

environmental aspects of sustainable development common to all Member States that must be integrated into urban planning. (Faludi, A. 2010)

In terms of discourse, influence can come from EU initiatives such as Europe 2020 and the Urban Agenda, which form an ideological basis for spatial planning in favor of alignment with pan-European goals, which certainly promotes sustainability and inclusiveness within urban development, but at the same time emphasizes the influence of supranational strategies on national systems. (Cotella, 2021)

At the regional level, the influence of external factors on sovereignty in spatial planning can be related to transboundary cooperation with neighboring countries within a specific region, where countries come together to address common issues related to the management of shared natural resources and infrastructure. (Herzog, n.d.) For example, the Danube River Basin, the management of which is coordinated between 19 countries. Influence can be exercised through mechanisms such as international treaties, for example, the UN Convention on the Protection of Transboundary Watercourses and International Lakes (United Nations Economic Commission for Europe, n.d.)

Other actors are regional infrastructure projects that aim to collectively develop transport, energy, and communication corridors between countries in the region. Examples of such projects can be the TRACECA Corridor (Transport Corridor Europe-Caucasus-Asia) (Yıldırır Keser, Hilal. 2015), which includes roads, ports, and railways, or the Chinese the BRI Initiative, although a global actor, also includes regional projects, such as the construction of infrastructure in Central Asia, which requires coordination between Kazakhstan, Kyrgyzstan, Uzbekistan and China. The mechanism of influence is the financing of international development banks and investment (P. Yu and Qiu, 2024)

A special role among regional actors is played by regional trade unions and agreements that facilitate the creation of a single economic space, which requires national spatial strategies to comply with common regional economic standards, such as the creation of free economic zones within national territories. The mechanism of influence is implemented through the establishment of standards for trade, investment, and land use. Examples of such actors are the regional development programs NAFTA, ASEAN, or ECOWAS. (Söderbaum, 2016)

Certain regional factors that limit sovereignty in spatial planning may manifest themselves in the context of political instability, regional conflicts, and territorial disputes. Such aspects may significantly limit territorial planning within a state's autonomy.

Finally, at the local level, influence can be exerted through non-state actors and local communities. Local territories may be controlled by non-state actors, such as criminal groups, ethnic communities, or local elites. For example, in the favelas of Brazil or certain areas of Mexico City, drug cartels effectively control the territories, disempowering state structures. (Davis, D. E. 2020).

Also, residents and activists may organize into social groups and may locally oppose state projects, defending environmental, cultural, or historical values, such as the movement against the Dakota Access Pipeline in the United States (National Museum of the American Indian, n.d.), where indigenous peoples and activists defended their land rights.

The following table describes in more detail the actors and their methods of influence at each level:

Table 3. Levels of influence of external factors on sovereignty in spatial planning

Source: Author's own elaboration

Level	Factor	Subjects	Impact on sovereignty & planning	Mechanism / Way of Impact
Global	Economic integration	TNCs; IMF; WB; UN; OSCE; Global Gateway; AIIB; BRI	Limits state sovereignty in land use & resource allocation	Agreements, financing, common standards, conditional loans
Global	Climate change	Paris Agreement; Kyoto Protocol	Restricts resource use, influences territorial development	Shared climate norms, emission reduction, and sustainable use requirements
Global	Digitalization	Google, Meta, global tech platforms	Complicates urban data governance and access	Tech dependence, data control, digital infrastructure dominance
Supranational	Regulations & legislation	EU, African Union	The agenda may contradict national interests	Directives, binding regulatory frameworks
Supranational	Financial conditionality	EU Structural Funds	Funding tied to compliance with conditions	Investments, subsidies, and monitoring mechanisms
Regional	Cross-border cooperation	Shared rivers, forests, and infrastructure	Requires coordinated planning decisions	Treaties, bilateral agreements, joint management
Regional	Regional conflicts	Political or military tensions	Hinders planning, risks territorial disputes	Occupation, instability, security threats
Regional	Market integration	NAFTA, ASEAN	Sets priorities for logistics & infrastructure	Trade rules, investment, and land-use standards
Local	Non-state actors	NGOs, gangs, corporations	Resource allocation constraints	Territorial control, influence over access
Local	Social movements	Local communities, activist groups	Pressure on planning bodies to reflect interests	Protests, strikes, public campaigns

Thus, the main types of external factors influencing the sovereignty of the state and limiting national autonomy within the framework of spatial planning were identified.

Next, our research will try to consider and analyze specific situations of spatial planning development in conditions of limited sovereignty using the example of several countries that, in our opinion, are most relevant to the main topic of our study.

Cases of Limited Sovereignty and Spatial Planning

This subchapter will review the experience of spatial planning development in the process of external influence of some post-Soviet countries, such as Georgia and Lithuania, and will draw conclusions that can be extrapolated to the experience of the country of our study due to similar contexts of spatial planning structure, due to the common Soviet past.

Georgia, like many Soviet countries after the collapse of the Soviet Union, faced the problems of transition from centralized Soviet governance and planned economy to a market economy and decentralized governance models, which led to fundamental changes in spatial planning. (Van Assche, K., & Salukvadze, J., 2011)

Authors Kristof Van Assche and Joseph Sal note that after the collapse of the centralized management mechanisms of the Soviet Union, a vacuum was created in Tbilisi that was quickly filled by private developers, which led to rapid and uneven development of the city, where the private interests of developers became the main dominant, as a result of which state control in the field of spatial development was greatly weakened.

The lack of proper regulation and control resulted in the fact that when developing the city, priority was given to profitable projects, often ignoring the needs of the local population. Another consequence was the imbalance between infrastructure, green areas, and residential areas. The widespread attraction of international investment by developers and the absence of any unified state norms for strategic planning gave impetus to the fragmented and unsustainable development of the city. (Joseph Sal and Van Assche, 2023)

One of the crucial factors in spatial planning in Tbilisi was the process of democratization of Georgia and its aspiration to integrate into European and international structures. A dilemma arose on how to preserve democratic interests in planning in the conditions of limited national sovereignty due to external political and economic pressure, which complicated the decision-making process at the local level. As a result, the democratic process in Georgia remained unfinished, despite sufficient success in the development of the city's infrastructure, where many decisions continue to be made following private interests rather than based on public needs. (Vardosanidze, 2000)

Based on the experience in spatial planning in Georgia, it can be concluded that successful development of spatial planning requires not only economic stabilization but also a deep democratic transformation of the city to ensure inclusiveness and accessibility of the city for all segments of the population, not just the elite.

Another experience in the field of spatial planning, the case of the Pagegiai Municipality in Lithuania, reflects valuable lessons for the current study, in that it examines the influence of supranational factors represented by the European Union on the implementation of spatial planning in two dimensions.

Firstly, through the need to adapt to supranational standards and strategies of the European Union, which often leads to difficulties and barriers, such as slowing down the process of implementing spatial planning policies due to the complexity of the coordination and control processes. In the case of Pagegiai Municipality, one of the problems was the bureaucratic burden on local authorities due to the introduction of strict requirements of the European Union on Strategic Environmental Assessment (SEA) and the lack of qualified personnel. Another problem is the lack of coordination between national, regional, and local authorities, which significantly complicates the process of effective territorial planning. (Mickevicius, Valciukiene, and Jukneliene, 2022)

As a result, on the one hand, integration processes with European supranational structures have provided many advantages in financing and opportunities to reform the spatial planning system, and on the other hand, they have significantly slowed down and complicated territorial planning processes, which has reduced the competitiveness of the municipality in attracting foreign investment, and has also led to an uneven distribution of resources and a decrease in the quality of life of the local population.

Additionally, the requirement for compliance of planning systems with EU regulations limits Lithuania's national sovereignty in making independent decisions in spatial development at all levels of government and creates an additional burden on local authorities, which are increasingly engaged in bureaucratic approval processes instead of working on making their own decisions on territorial planning. (Kavaliauskas, 2008)

To sum up the above, it can be noted that the concept of limited sovereignty plays a special role in the formation, development, and implementation of spatial planning. As illustrated by the precedents of Georgia and Lithuania, external factors such as international organizations, global economic and political integrations, as well as internal challenges, drastically affect the ability of states to exercise their national autonomy in the field of spatial planning.

External factors, including global integration, supranational actors, and regional initiatives, often limit countries' independence in making spatial decisions and contribute to the failure to consider the needs and interests of the local population in favor of international integration, which significantly reduces the ability to implement sustainable and inclusive planning.

Therefore, in the context of limited sovereignty, it is extremely important to find an equilibrium between international obligations and the needs of the local population to ensure effective planning, which in such conditions requires the development of adaptive strategies that take into account the differences in interests and powers at all levels to achieve long-term goals of sustainable territorial development.

2.3 One Belt One Road Initiative (BRI) and Its Impact on Spatial Planning

Theoretical Foundations and Objectives of the BRI

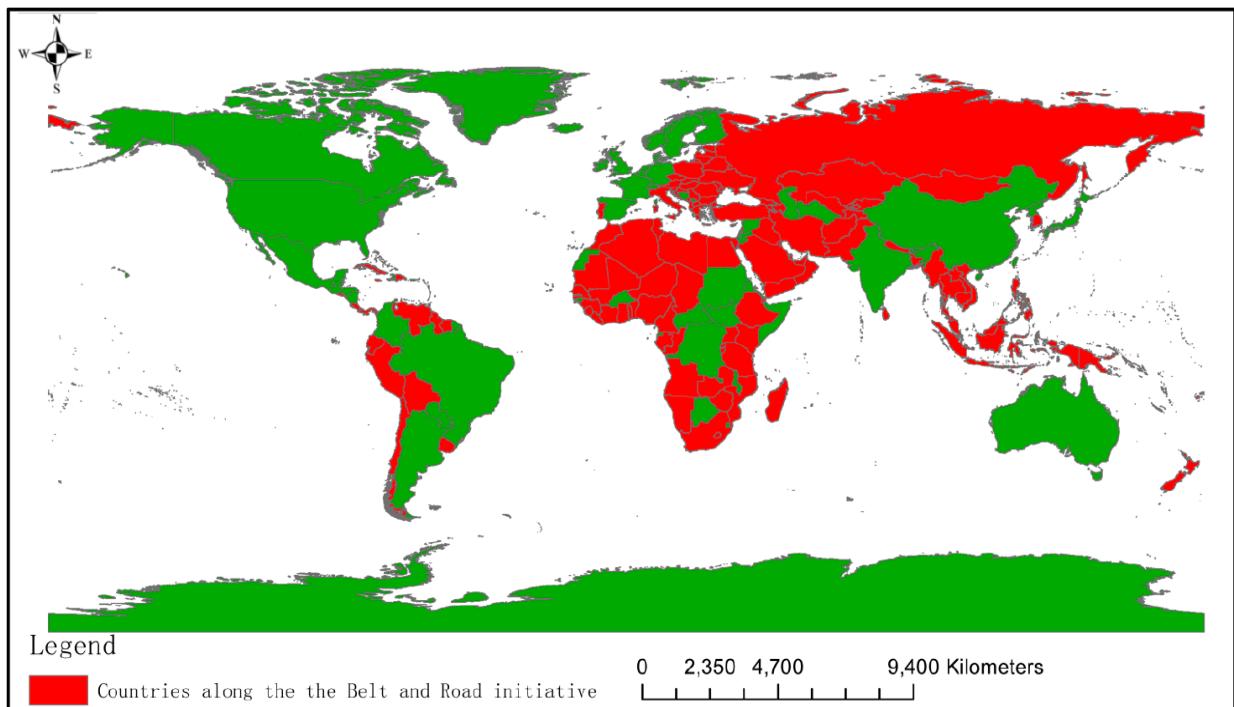
The One Belt One Road Initiative (BRI) was created by the President of China (PRC) Xi Jinping during his official visit to Indonesia and Kazakhstan in 2013. This global initiative aims to develop infrastructure links between states and strengthen international cooperation. The main idea is to revive the Great Silk Road connecting Asia and Europe, but the current version also includes African countries. Integration processes between these continents within the BRI include transport, energy, and economic ties. (Parepa, 2020)

The BRI was earlier known as the BRI, and the word "strategy" was used as a suffix. Then it was felt that the name, the brand word "strategy", may be open to misinterpretation and misunderstanding by other countries. So, the name was changed to the BRI and incorporated into the PRC's constitution in 2017. (International Management Institute (IMI) Bhubaneswar, Odisha, India, and Choudhury, 2021.)

It can be regarded as the largest infrastructure development and investment undertaken by any country in human history. This is supported by the fact that by 2017, the BRI covered more than 70 countries in the region, while by 2023, it covered 152 countries, home to over 65% of the world's population. Besides, over 40% of the world's GDP emanates from such countries. The whole project was supposed to be completed by 2049, on the eve of the 100th anniversary of the PRC.

Figure 1. Graphical distribution of countries along with the BRI initiative.

Source: Mercator Institute for China Studies, 2024



The BRI Goals

The main goal of the BRI is to build infrastructure links between countries in the direction of Asia, Europe, and Africa to promote economic integration by facilitating trade between participating countries. These infrastructure links include the construction of railways, highways, ports, and pipelines, as well as the development of digital infrastructure. (Lain et al., 2018)

The fundamental goal also includes smaller but equally important tasks, including simplifying logistics, increasing the availability of financial resources, and strengthening cultural exchanges. (Chen, Song, and Yang, 2022)

The goals stated by China itself are: “to build a single large market and make full use of both international and domestic markets through cultural exchange and integration, improve mutual understanding and trust among member countries, and ultimately achieve an innovative model with capital inflow, talent pool, and technology database”. (BRI Initiative Official Website, n.d.)

In line with China’s discourse, the BRI is positioned as a beneficial platform for all participants, created to build a common future, where member states gain access to infrastructure investment, financing, and new markets. All this significantly stimulates economic growth for all states participating in the initiative. (BRI Initiative Official Website, n.d.)

However, there are alternative views put forward by critics, mostly geopoliticians, who point out that the true goal of the BRI is to strengthen China as a global economic and military power, in other words, to create an alternative polarity of the world to counterbalance the United States. And the platform is not aimed at cooperation, but at exploiting the territorial resources of the participating countries and making these countries indebted to China, thereby strengthening China's influence and increasing its presence in the regions covered by the BRI. (Khan, 2023.)

In any case, according to scholars, in an economic sense, China is currently faced with a huge amount of excess capacity that needs access to large world markets (Siu, Ricardo C.S., 2019), and the BRI initiative is one of the ways to provide these markets.

Geographical directions of the BRI

The initiative is divided into two key directions: the Silk Road Economic Belt and the 21st Century Maritime Silk Road (Zhang et al., 2020).

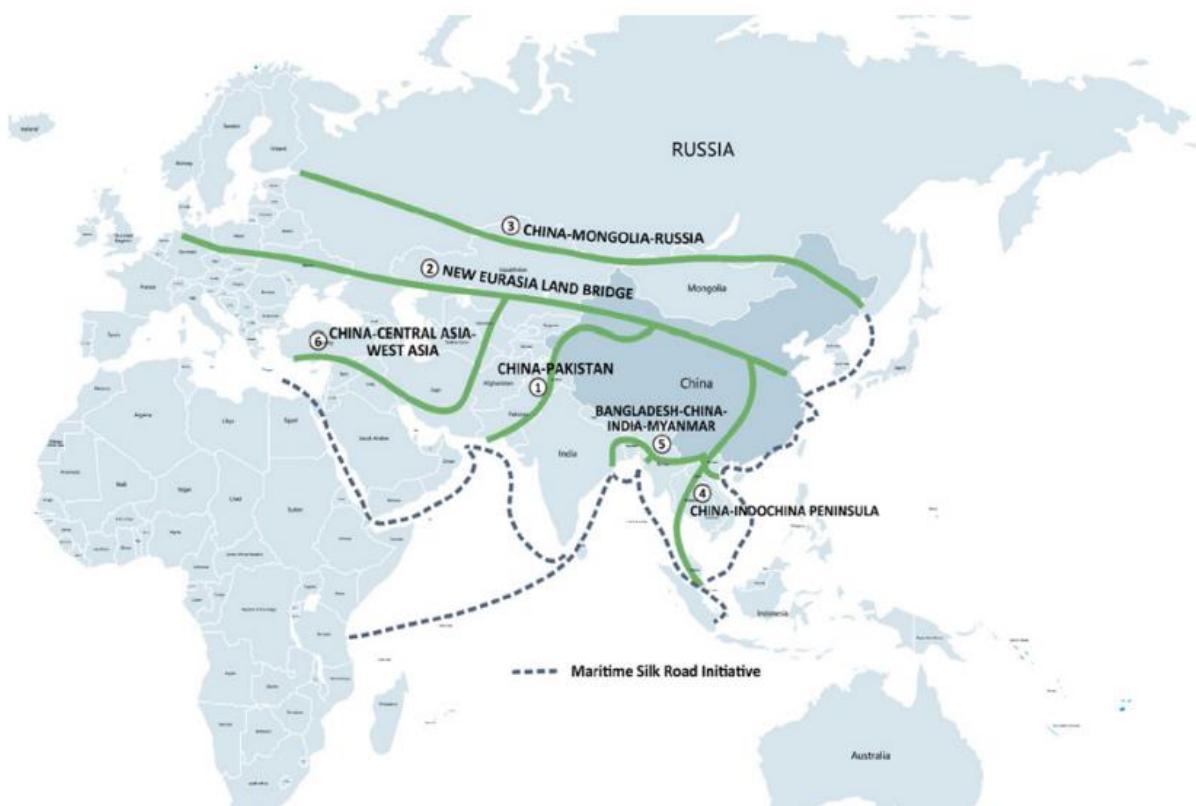
The Silk Road Economic Belt (SREB) focuses on developing land transport corridors linking China with Central Asia, Europe, and the Middle East, while the Maritime Silk Road (MSR) focuses on creating trade routes through the South China Sea and the Indian Ocean (Chatzky and Mc Bride, 2019). These directions are inextricably linked to the modernization of infrastructure, the simplification of international trade barriers, and the implementation of modern logistics solutions (Summers, 2016).

The SREB aims to improve China's overland transport links to Europe, Russia, Central Asia, the Caucasus, Turkey, Iran, West Asia, South Asia, and Southeast Asia through six BRI corridors: (I) the New Eurasian Land Bridge (Corridor; ii) the China-Central Asia-West Asia Corridor; iii) the China-Mongolia-Russia Corridor; iv) the China-Pakistan Economic Corridor (CPEC); v) the China-Myanmar-Bangladesh-India (CMBI) Corridor; and vi) the China-Indochina Peninsula Corridor.

The MSR aims to build or improve ports along the sea routes linking China's coastline, one of which crosses the South China Sea via the Strait of Malacca into the Indian Ocean and extends to Europe, and the other crosses the South China Sea and extends to the South Pacific. The BRI envisages investments not only in corridor infrastructure (rail, road, and port projects to improve cross-border transport), but also in complementary infrastructure such as energy and ICT. (Khabibjonov U. and Ismoilov I., 2024)

Figure 2. The BRI corridors

Source: Nadin, Rebecca; Mami, Elvira; Calabrese, Linda et al., 2024



However, the initiative's areas continue to be expanded around the world. For example, in 2017, at the first BRI Forum for International Cooperation in Beijing, the BRI was further expanded to include the Digital Silk Road. A year later, a new Polar Silk Road was opened, aimed at developing Arctic shipping routes, which was shown in the first White Paper on Arctic Policy (China's Arctic Policy), released in 2018 by the State Council Information Office. (Kheyfets, 2021)

According to the latest available information, the BRI initiative has implemented 6 designated economic corridors and 82 free economic zones. (Kheyfets, 2021)

Principles and Theoretical Foundations of the BRI

According to the stated goals, the principles of mutual benefit, inclusiveness, and sustainable development are the fundamentals of the BRI operating principles. From the point of view of the theoretical basis, the initiative relies on the concepts of economic integration and globalization. (Khabibjonov U. and Ismoilov I., 2024)

The principle of mutual benefit implies that the BRI is a beneficial platform for all participating countries, as it gives them access to infrastructure investments, financing, and new markets. All of these are important components on the path to economic development and prosperity.

The principle of inclusiveness is expressed in the fact that the BRI is not limited to just one region or China's traditional partners. This initiative covers more than 140 countries on all continents, including Europe, Asia, Africa, Latin America, and Oceania, which indicates the global interaction of all interested countries, regardless of their level of economic development and geographic area. Also, for low- and middle-income countries, the initiative provides project financing through the Asian Infrastructure Investment Bank (AIIB) and the China Export-Import Bank, as well as the establishment of free economic zones.

Moreover, the BRI promotes cultural and educational exchanges among participating countries by offering study and research opportunities at Chinese universities. (International Management Institute (IMI) Bhubaneswar, Odisha, India, and Choudhury, 2021)

The principle of sustainable development is also evident in the activities of the initiative. In particular, China, to enhance the legitimacy of the BRI, has worked closely with the United Nations Development Program (UNDP) to achieve the UN Sustainable Development Goals. The BRI has also received support for common development and free trade in three UN Security Council resolutions in 2016, 2017, and 2018. (Parepa, 2020)

As a result, today, China is increasingly adapting the BRI projects to international standards in the field of sustainable development, including the principles set by the UN under the 2030 Agenda, working on three main areas of sustainability: economic, environmental, and social.

In terms of environmental sustainability, China is actively involved in projects related to renewable energy, energy-efficient solutions, and green transport. For example, in Pakistan, a solar power plant was built within the framework of the China-Pakistan Economic Corridor (CPEC), Quaid-e-Azam (China-Pakistan Economic Corridor Authority, n.d.), with a capacity of 1000 MW, which is one of the largest power plants in the world. In the province of Sindh, a wind farm, Jhimpir (Zorlu Enerji Pakistan Ltd., 2020), was built to develop renewable energy sources,

which help reduce dependence on carbon energy sources. Also, Chinese companies are investing in the development of solar and hydroelectric power plants in Africa, such as Solar Power in Kenya or the Adama Hydroelectric Power Station in Ethiopia. (Reuters, 2024)

Asian Solar Power Plants in Cambodia and Laos, or the Wind power plant Monsoon Wind Power Project (Laos) (Radio Free Asia, 2024), are similarly financed by the Chinese side within the framework of the initiative.

China-Laos High-Speed Railway shows the Implementation of Green Transport, or the China-Europe Railway Express Project (MDPI, 2023), and others that significantly reduce carbon emissions compared to road transport. China also uses energy-efficient technologies within the BRI projects, such as green industrial parks (China-Belarus Industrial Park) (Global Times, 2023), smart cities, and green building technologies, which involve the use of energy-efficient materials and heating systems, which are implemented in the Central Asian countries of Kazakhstan and Uzbekistan. (Global Times, 2023)

All these principles are based on the concept of multilateral cooperation, which is expressed in the regular holding of multilateral forums, such as the BRI Summit, where the initiative's strategies and projects are discussed. (Council on Foreign Relations, 2024)

Thus, the theoretical basis of the BRI is to integrate economies for mutually beneficial, inclusive, and multilateral cooperation for sustainable development.

The BRI Institutions

According to Liu, D., & Jin, Y. (2024), the BRI covers five cooperation priorities: policy coordination, infrastructure connectivity, free flows of trade and investment, financial integration, and people-to-people relations. To financially support projects within the BRI, a state-owned investment fund, the Silk Road Fund, was established, with the Export-Import Bank of China, China Investment Corporation, China Development Bank, and the State Administration of Foreign Exchange as its main shareholders.

The fund's initial capital was \$40 billion, which to this day makes it one of the largest investment funds in the world aimed at supporting infrastructure projects. (Garlick, 2019), (Xing, 2019). In 2014, the Asian Infrastructure and Investment Bank (AIIB) was formally established and launched in 2016 with US\$100 billion in capital to address the financing gap for infrastructure projects. China is the main shareholder, providing half of the initial capital. (Zhou and Esteban, 2018)

The institution is designed to provide long-term loans for large infrastructure projects such as transportation, railways, airports, and energy infrastructure. (Aoyama, 2017) Subsidies and co-investments with other international institutions are an alternative method of financing. Other major Chinese banks involved in financing the BRI projects include the Export-Import Bank of China (Exim Bank) and the China Development Bank. (Rolland, 2017)

The coordinating bodies of the BRI include the International Forum on the BRI Initiative, which discusses projects and cooperation between participating countries, and the Regional Cooperation Coordination Centers, which are established in key countries to facilitate the implementation of projects. In addition to these, there are also educational and environmental institutes, such as the Silk Road Institute of the Chinese Academy of Social Sciences (CASS) (Silk Road Institute, n.d.), engaged in research in the field of politics, economics and regional cooperation the BRI, or the International Coalition for Green Development (BRI Green Development Coalition), which is engaged in the promotion of environmentally sustainable projects within the framework of the initiative. (The BRI Initiative International Green Development Coalition, 2023)

The BRI Projects

The BRI framework includes 5 main types of infrastructure projects: railways, energy, maritime projects, logistics hubs, and digital infrastructure. Of these, one of the most important is the development of transcontinental and interregional railways linking China with Europe, Russia, and Central Asia. Their main goal is to reduce the distance and time of transportation of goods and people. Examples include the China-Europe Project and the Laos-China Railway. (Clarke, 2017).

Building infrastructure for energy production and transportation is another key type of project that the BRI focuses on, such as the China-Pakistan Power Grid, which is designed to transport electricity and gas. (Clarke, 2017)

Since maritime projects are the main component of one of the two key areas of the BRI, evidenced by the 21st Century Maritime Silk Road, China pays special attention to the development of this project type. Their main goals are the development of maritime routes through important transport hubs such as the Suez Canal, the Strait of Malacca (and others), and the development of port infrastructure. Examples: Hambantota International Port in Sri Lanka, Port of Djibouti in Africa. (Council on Foreign Relations, 2024)

Logistics hubs play an important role in reducing the cost of transporting goods and cutting logistics costs. Such projects include the Xinjiang Logistics Hub (China), connecting China with Central Asia and Europe, and the Laos-Cambodia Hub in Southeast Asia. (H. Yu, 2017)

And the final type of project is digital infrastructure, which shows increasing importance in the context of a rapidly growing digital economy and innovation. Within this framework, projects are being developed in the field of telecommunications, Internet networks, and e-commerce. Examples of such projects within the BRI are the “Digital Silk Road”, where infrastructure is being created for the exchange of data between China, Central Asia, East Africa, and Europe. (Council on Foreign Relations, 2024)

Main BRI projects in Central Asia

This sub-chapter will look at the BRI projects in the Central Asian region as one of the key regions of the initiative, as Central Asia is of strategic importance geographically, being located between China and Europe.

Overall, the main goal of the BRI in Central Asia is to improve transport links and stimulate closer economic integration between the countries through substantial Chinese financing of transport infrastructure, better coordination of political, economic, and trade cooperation between the countries by providing a significant increase in the inflow of direct investment from Chinese private firms and banks. All this is aimed at promoting “an orderly and free flow of economic factors, highly efficient allocation of resources and deep integration of markets” (NDRC et al, 2015).

And one of the main conceptual goals is the Revival of the Great Silk Road, which has historically connected China with Europe, the Middle East, and India via Central Asia.

This goal is being implemented within the framework of the “Silk Road Economic Belt” (SREB) and the “21st Century Maritime Silk Road” (MSR) directions, within which there are projects aimed at developing the railway and road transport network, as well as modernizing ports and building logistics hubs. (Central Asia Program, Nazarbayev University, and National Analytical Center, 2018).

Within these directions, there are several strategically important corridors covering the regions of Central Asia and the Caucasus. Two BRI corridors passing through the Central Asia and Caucasus region (CAC) connect China with Europe and China with Iran and Western Asia. The first uses two railway routes to reach Europe: one through Kazakhstan, Russia, and Belarus, and the other through Kazakhstan, the Caucasus, and Turkey. The second uses three routes to reach

Iran and West Asia, two of which pass through Uzbekistan. One route passes through Kazakhstan, Uzbekistan, and Turkmenistan, the second through the Kyrgyz Republic, Uzbekistan, and Turkmenistan, and the third through the Kyrgyz Republic, Tajikistan, and Afghanistan. (World Bank, 2020).

Figure 3. The BRI corridors and routes passing through the Central Asia and Caucasus regions.

Source: Khabibjonov, U., and Ismoilov, 2024

Box 2: BRI Corridors and routes passing through CAC

The New Eurasian Land-bridge BRI Corridor connects China to Europe using two routes:

- **Route 1:** China (various cities, Urumqi, Alashankou) – Kazakhstan (Dostyk, Mointy, Nur-Sultan, Petropavli) – Russia (Yekaterinburg, Moscow) – Belarus (Brest) – Poland (Małaszewicze) – Germany (Duisburg) and onwards to various European cities. (Note: all are operational rail connections).
- **Route 2:** China (various cities, Urumqi, Khorgas) – Kazakhstan (Altynkol, Almaty, Shu, Zharyk, Zhezqazghan, Saksaulskaya, Shalkar, Beyneu, Aktau) – Azerbaijan (Baku/Alyat, Ganja, Beyuk Kesik) – Georgia (Gardabani, Tbilisi, Akhalkalaki) – Turkey (Kars, Istanbul) and onwards by rail/road to various European cities. (Note: all are operational rail connections except Aktau to Baku, which is the Caspian Sea ferry segment).

China-Central Asia-West Asia BRI Corridor connects China to Iran/West Asia using three routes:

- **Route 3:** China (various cities, Urumqi, Khorgas) - Kazakhstan (Altynkol, Almaty) - Uzbekistan (Tashkent, Samarkand, Navoi) – Turkmenistan (Farab, Mary, Serakhs) – Iran (Sarakhs, Mashad) and onwards to West Asian cities (also India through Bandar Abbas) (Note: all are operational rail connections).
- **Route 4:** China (various cities, Kashgar) – Kyrgyz Republic (Irkeshtam, Osh) – Uzbekistan (Andijan, Pap, Tashkent, Samarkand, Navoi) – Turkmenistan (Mary, Serakhs) – Iran (Sarakhs, Mashad) and to West Asia (also India through Bandar Abbas). (Note: the route is mainly rail, except Kashgar –Irkeshtam – Osh segment by road)
- **Route 5:** China (various cities, Kashgar) – Kyrgyz Republic (Irkeshtam, Sary Tash) – Tajikistan (Karamyk, Dushanbe, Vahdat, Yavan, Nizhny Panj) – Afghanistan (Shir Khan Bandar, Kunduz, Mazar-e-sharif, Herat, Ghurian) – Iran (Torbat-e Heydarieh, Tehran) to West Asia (also, India thru Bandar Abbas). (Note: route connected partly by rail with two large segments, Kashgar – Irkeshtam – Sary Tash – Karamyk – Dushanbe and Nizhny Panj - Shir Khan Bandar – Kunduz – Herat – that are connected only by road today).

Among the railway projects, it is possible to highlight the China-Kyrgyzstan-Uzbekistan Railway; this is considered one of the biggest projects for the region in developing sustainable transport communication with a view to decreasing the logistics time, which in turn can strongly facilitate trade relations within the region. (Lain et al., 2018)

The Lianyungang-Kazakhstan Railway is another example of a project that aims to improve the transport network to strengthen trade and economic cooperation in the region (Khabibjonov U. and Ismoilov I., 2024)

Among them, the Bishkek-Osh highway of Kyrgyzstan is very prominent as it will revamp the highway, improving the transport links between the north and south parts of the country. The

Western Europe-Western China highway connects China with Russia and Europe through Kazakhstan. (Kamnde and Wu, 2024).

In terms of energy projects, the largest in the region is the Central Asia-China gas pipeline, with a length of 1,800 km, passing through Turkmenistan, Uzbekistan, and Kazakhstan, where the latter is the largest exporter of gas to China from this region. (Lain et al., 2018)

Also, to ensure a significant improvement in the energy sector in Tajikistan, China, as part of its initiative, provides large investments in the construction of hydroelectric power plants, the largest of which is the Rogun HPP. (World Bank, 2020).

The Tajikistan-Kyrgyzstan-Uzbekistan irrigation system is an example of a significant water supply project to ensure food security in the region. (World Bank, 2020).

Among the land ports, one of the main places is occupied by Khorgos Eastern Gate (Kazakhstan), which connects Central Asia with China and Europe and is an important hub for logistics and trade. Similarly, the Tashkent logistics hub serves as a hub for transit trade between China, Central Asia, and Russia. (Kamnde and Wu, 2024)

Mechanisms of the BRI Influence on Spatial Planning in Central Asia

The BRI Initiative, created by China, appears to be one of the largest economic integrations in the modern world, serving to develop infrastructure, create transport corridors, and strengthen economic ties between Asia, Europe, and Africa. Central Asia has become a key region, as it is located at the crossroads of key trade routes that have historically connected Europe and Asia. (Lain et al, 2018)

However, its implementation raises many issues related to spatial planning, national resource management, and preserving the national sovereignty of the countries in the region.

One of the areas of influence of the BRI on spatial planning in Central Asia is the transfer of significant land areas of the Central Asian region to Chinese investors as part of infrastructure projects. (World Bank, 2020).

The main issue here is the limitation of national control over strategic territories, especially near borders, and the possible use of these lands in the interests of foreign investors rather than local communities. As a result, this often leads to limited access of local populations to traditionally used lands and risks of environmental damage. For example, large tracts of land in mountainous areas have been allocated for the construction of a railway linking China to Uzbekistan via Kyrgyzstan, but since the route includes the Arpa Valley and the Makmal region, which are vital

for local livestock farming, some local communities raise concerns that this will lead to the destruction of ecosystems and the loss of pastures for livestock. (Dialogue Earth, 2024)

The project includes the construction of 27 tunnels with a total length of 103 kilometers and 46 bridges with a length of 15 kilometers, which indicates a large-scale intervention in natural landscapes. (Caspian Post, 2024)

Even though official sources assure that high environmental standards will be observed during the project implementation, experts note that to minimize negative consequences, it is necessary to conduct thorough environmental and social assessments, as well as to ensure the participation of local communities in the decision-making process. This will allow for the development of measures to preserve ecosystems and support traditional livestock breeding, which is especially important in the context of sustainable development of the region. (Dialogue Earth, 2024)

Another fact of the negative impact on spatial planning is the (ii) transfer of land within the framework of the settlement of border disputes. Thus, in 2011, Tajikistan transferred to China 1,158 square kilometers of disputed territories in the Eastern Pamirs, which amounted to 0.77% of the total area of the country. This decision was the result of many years of negotiations, which have been going on since 1999, when an agreement on the state border was signed and caused considerable criticism within the country.

Opposition politicians and public figures viewed this as a concession of national interests under the pressure of financial obligations. (Radio Ozodi, 2021) Such territorial transfers result in the loss of control over strategically important lands and pose a significant threat to national interests and sovereignty. Although this incident happened a few years before the creation of the BRI, it can be seen as an aspect of Chinese influence, which continued later within the framework of the initiative.

(iii) China's provision of large loans for infrastructure and industrial projects under the BRI Initiative is another major lever of influence over the Central Asian region economically, which often leads to risks of debt dependence. In cases where countries have difficulty paying off these debts, they may be forced to provide China with access to strategically important resources, including land, minerals, water, and energy resources, to pay off the debts.

This phenomenon is commonly known as the "debt trap." ("An Assessment of China's Power Expansion in Asia Through the Lens of the BRI Initiative", 2023).

One example of such dependence is the use of land resources as collateral for loans. Chinese financial institutions offer large loans to Central Asian countries, which allows them to implement

large-scale projects. However, the combined debt of the five Central Asian countries to China by mid-2023 was about \$15.7 billion, which leads to growing vulnerability of the region. ("An Assessment of China's Power Expansion in Asia Through the Lens of the BRI Initiative", 2023).

For example, in Uzbekistan, Chinese companies are actively involved in the development of industrial zones, one example is "Two Regions - One Park" in the city of Chirchik, with the participation of such large Chinese firms as China Construction Fifth Engineering Division Corp. and BSM Group Limited. The implementation of this project is scheduled to start in early 2025, which requires significant land resources for industrial use. (Kamnde and Wu, 2024)

This kind of agreement allows Chinese companies to retain a prominent level of influence in decision-making in the development and management of these zones, which expands China's sphere of influence in the country. Although such agreements significantly stimulate local economic growth, they also increase dependence on Chinese investment and lead to a loss of national control over strategic resources. (Kamnde and Wu, 2024)

(iv) The establishment of special economic zones (SEZs) has become a crucial factor in the economic interaction between China and Central Asian countries within the framework of the BRI Initiative. Such zones are usually established by attracting large Chinese investments, which makes them an important tool for economic cooperation, but at the same time raises major questions about control and influence on national interests. (Kamnde and Wu, 2024)

One of the striking examples is the Khorgos International Border Cooperation Zone on the border of Kazakhstan and China. The Chinese part of this zone is much more developed than the Kazakh part, which increases Kazakhstan's economic dependence on the BRI partners. The developed infrastructure, high investment flow, and better-organized logistics in the Chinese part of the zone compared to the Kazakh part demonstrate a contrast and imbalance. This fact not only reduces the competitiveness of the Kazakh economy within the zone but also raises concerns about the country's long-term strategic interests. (Central Asia Program, Nazarbayev University, and National Analytical Center, 2018)

In Uzbekistan, an analogous situation can be observed in the Angren Special Economic Zone, where Chinese companies are key players in infrastructure development and project management. (Gazeta.uz, 2017)

At the same time, special economic zones, such as Khorgos and Angren, very often turn land management into a certain kind of privilege for foreign investors at the expense of state control. Simultaneously, national authorities might face difficulties in making resources accessible to the local population and ensuring that economic interests are equally distributed.

In the long term, this can impact the Central Asian countries' sovereignty in making economic policies and decisions based on their interests. Therefore, regardless of some specific advantages of special economic zones, such as attracting investment and jobs, their collaboration with China has been provoking a disequilibrium between economic benefits and keeping national control over significant resources. (Lall and Lebrand, 2019)

(v) The Transboundary Natural resource management issues are increasingly becoming a case in Central Asia, especially with China's involvement in several regional water and energy projects. China invests much in irrigation system development, upgrade, and construction of hydroelectric power plants that demand a holistic approach toward land and water use coordination between the countries in the region.

These projects in the BRI Initiative simultaneously strengthen China's economic power, along with a threat to the sovereignty of member states. (An Assessment of China's Power Expansion in Asia Through the Lens of the BRI Initiative, 2023) The most vivid example could be projected along the transboundary rivers such as the Amu Darya and Syr Darya. These are important water bodies for Central Asia, which feed agriculture, energy, and even domestic needs. (China-Uzbekistan Friendship, 2023)

On its part, China offers modern technologies, equipment, and financing for constructing hydraulic structures, including irrigation and hydroelectric power plants. Yet, such a dependence on Chinese technology and materials makes the countries of the region vulnerable because the greater part of the infrastructure starts to be dependent on foreign management and technical support.

Although modernization of irrigation systems brings benefits in the form of increased water efficiency, Central Asian countries are losing their independence in determining priorities for water use.

(vi) Agricultural land leasing in Central Asia is another principal factor of China's influence. Chinese companies lease big plots of land for growing grain crops and vegetables, thus providing investment in the agricultural sector, though some challenges are raised by this phenomenon for social stability. (Putz, 2021)

For example, when China announced the intention to lease 1 million hectares of Kazakhstan's agricultural land for rapeseed, soybean, and corn production in 2009, there was severe discontent among the local population. Such a fact has caused wide public outcry, yet in 2016, the government of Kazakhstan extended the lease term from 10 to 25 years to attract more foreign investors, including China.

In this regard, mass protests took place in the country because, in the opinion of the local population, such a step threatened the loss of control over land resources and limited access to fertile land for Kazakh farmers. After this, the government had to suspend this initiative and introduce a five-year moratorium on any changes to the land legislation. (BBC News, 2016)

In 2021, Kazakh President Kassym-Jomart Tokayev signed a law that finally bans the sale and lease of agricultural land to foreigners, which allowed citizens to regain and strengthen their trust in the state. (Putz, 2021)

As a result, the leasing of agricultural lands by Chinese companies remains one of the most polemic and sensitive issues in Kazakhstani society, raising an important question of how to find a balance between economic benefits and local and national interests.

Finally, taking in consideration the six factors of the BRI influence discussed above, we could identify two levels of the BRI influence on spatial planning in Central Asian countries: global and regional.

On the global level, China attempts to shape the development of the territories through tools of economic dependence, such as loans, investments, and financial assistance that, in turn, tend to reduce the sovereignty of national spatial decisions and strengthen economic dependence on China.

At the regional level, the BRI has brought in some impact because it created the need for coordination between Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan, while the transport corridors crossing these countries require a joint plan, harmonization of customs and administrative procedures, and adherence to common standards. These interactions improve the regional cooperation and integration that promotes economic development, but on the other hand, limit sovereignty for the individual states.

Thus, it is obvious that the BRI has a multi-level influence on Central Asian spatial planning, both global and regional, because participation in the BRI project means being integrated into one big complex system of economic, infrastructure, and transport corridors that have a big impact on spatial planning. It is especially evident in Central Asia, where countries are facing large debts with China and falling into "debt traps". These financial mechanisms limit their sovereignty in spatial planning decisions.

Chapter 3: Methodology

This dissertation embarks on an exploration of the BRI Initiative and its impact on spatial planning in Uzbekistan, a strategically significant country in Central Asia. The study aims to investigate how the BRI-driven infrastructure projects influence Uzbekistan's urban and regional planning strategies, particularly in the context of limited sovereignty and external economic dependencies. While the BRI holds the potential to enhance connectivity, economic integration, and spatial modernization, its broader implications on national planning priorities, governance autonomy, and socio-spatial structures constitute the focal points of this research.

At the core of this dissertation lies the principal question: How does the BRI Initiative affect spatial planning in Uzbekistan? Complementing this overarching question are two secondary inquiries, designed to delve into specific aspects and unravel the complexities of the dissertation's focus.

The first secondary question examines the mechanisms through which the BRI shapes Uzbekistan's spatial planning, including infrastructure development, regulatory adjustments, and governance shifts. This inquiry seeks to determine the extent to which Uzbekistan's planning policies are influenced by external factors, particularly China's strategic economic interests, and whether national sovereignty is compromised in the process.

The second secondary question investigates the experiences and perspectives of key stakeholders - government officials, urban planners, and local experts - regarding the implementation of the BRI projects in Uzbekistan. By capturing the diverse viewpoints of these groups, the research aims to construct a comprehensive narrative reflecting the varied impacts and perceptions associated with the BRI-driven urban and regional transformations.

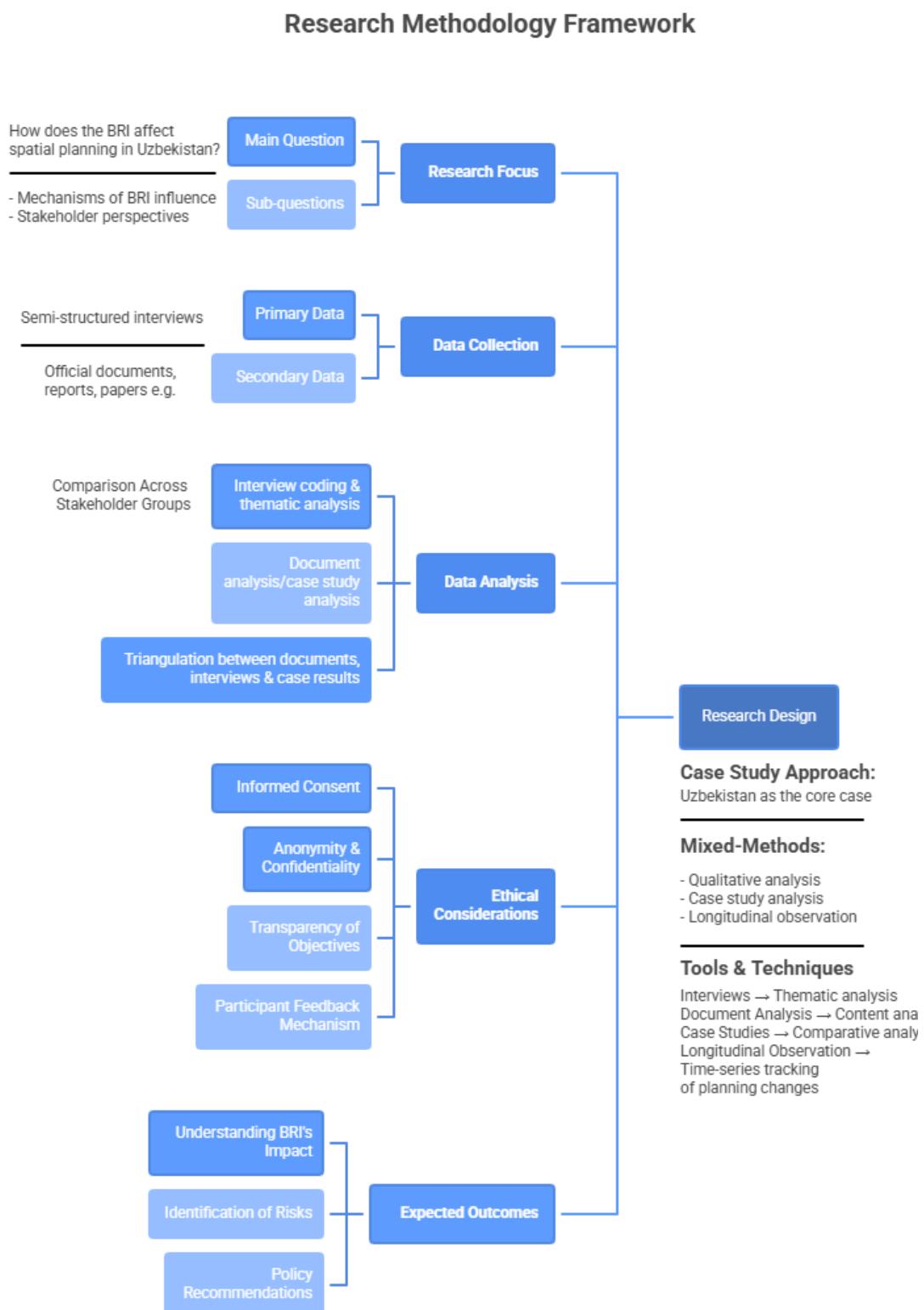
The overarching goal of this dissertation extends beyond merely assessing the influence of the BRI on Uzbekistan's spatial planning. It aspires to deepen our understanding of the intricate interplay between international economic initiatives, urban governance, and national sovereignty in the realm of territorial development. Through this exploration, the research endeavors to contribute valuable insights that can inform more adaptive and sustainable spatial planning strategies for countries navigating external pressures. As the study unfolds, it will shed light on how Uzbekistan can balance international cooperation with national development priorities, fostering spatial policies that align with both economic growth and territorial autonomy.

This section of the dissertation outlines the research design and methodological approach that will be used to investigate the research questions. It includes a detailed description of data collection methods, sampling strategies, and participant selection criteria. It also discusses the ethical considerations that need to be considered during the research process.

The methodology section of this research is pivotal in elucidating the systematic approach employed to examine the relationship between the BRI Initiative and its impact on spatial planning in Uzbekistan. By focusing on specific case studies within the country, the research aims to provide a granular analysis of the socio-economic and spatial dynamics at play in selected regions. This methodology section outlines the research design, data collection methods, and analytical tools used to navigate this exploration effectively.

Figure 4. Research Methodology Framework

Source: Author's own elaboration



3.1. The Research Approach

The research design adopted for this study is primarily characterized as a case study approach. A case study design is particularly appropriate when examining the impact of international initiatives on national spatial planning, as it allows for an in-depth analysis of the specific socio-economic, political, and spatial dynamics within a chosen context.

This research will focus on Uzbekistan as a case study to ensure a comprehensive understanding of the localized impacts of the BRI Initiative (the BRI) on spatial planning. By employing a case study approach, we look to capture the nuances of Uzbekistan's urban and regional development, the experiences of its key stakeholders, and the implications of the BRI-driven projects within the national planning framework.

The research approach for the dissertation "The Impact of the BRI Initiative on Spatial Planning in Uzbekistan" is a mixed-method approach, combining qualitative methods, case study analysis, and Longitudinal Observation. This choice is justified as follows:

Qualitative Analysis:

Objective: To better understand the socio-political and economic implications of the BRI-related spatial planning changes.

Methods: Interviews with government officials, urban planners, and local experts; content analysis of policy documents, agreements, and planning regulations related to the BRI projects.

Case Study Analysis:

Objective: To examine specific BRI projects in Uzbekistan and identify their unique characteristics, successes, and challenges.

Methods: Selecting representative case studies, such as transport corridors, industrial zones, and urban renewal projects, for in-depth analysis; apply comparative methods to highlight similarities and differences in spatial development patterns.

Longitudinal Observation:

Objective: To assess the long-term effects of the BRI on Uzbekistan's spatial planning and governance structures.

Methods: Analyzing changes over time using historical data and time-series analysis; conducting follow-up interviews with stakeholders at distinct stages of the BRI project implementation.

A mixed-method approach allows for a comprehensive and multidimensional exploration of the subject, combining the strengths of various methodologies to provide a thorough understanding of how the BRI influences spatial planning in Uzbekistan. This integrative approach helps uncover immediate and long-term implications, contributing valuable insights into future policy-making and sustainable development strategies.

3.2. Data Collection Methods

This study employs a diverse range of data collection methods to ensure a comprehensive and multidimensional analysis of the BRI's impact on spatial planning in Uzbekistan. The research relies on both primary and secondary data sources, incorporating a combination of official documents and interviews.

Document analysis serves as a crucial method for understanding the formal policies and legal frameworks that govern spatial planning in the context of the BRI.

This includes the examination of official government reports, urban development plans, legislative documents, and agreements between Uzbekistan and China. These documents offer insights into the strategic priorities set by national and regional authorities, as well as the formal obligations Uzbekistan has undertaken as part of its participation in the BRI.

Furthermore, policy papers from international institutions, such as the World Bank and Asian Infrastructure Investment Bank, will be reviewed to contextualize Uzbekistan's spatial planning within broader global trends.

Semi-structured interviews represent an essential qualitative tool for capturing expert perspectives on the implications of the BRI for urban and regional development.

The interview component of the research serves as a critical avenue for delving into the nuanced perspectives of key stakeholders involved in or affected by the BRI Initiative (the BRI) and its impact on spatial planning in Uzbekistan. This qualitative approach will provide a profound understanding of subjective experiences, opinions, and insights that may elude other research methods.

3.3. Tools and Techniques

A combination of qualitative research tools and techniques is utilized to ensure a comprehensive and methodologically sound approach to analyzing the impact of the BRI Initiative on spatial planning in Uzbekistan. These tools include interviews, data collection, literature review, and case study analysis.

Interviews

Interviews serve as a primary tool for gathering qualitative insights from key stakeholders. By employing semi-structured formats, this method allows for in-depth exploration of perspectives, enabling the research to capture both expert opinions and lived experiences.

A purposive sampling approach was used to ensure a diversity of perspectives. Experts were selected to represent key areas that are related to spatial development and the impact of external investment:

Public sector (urban planners-practitioners) – an employee of the State Unitary Enterprise TashkentboshplanLITI involved in the design and approval of master plans.

Strategic analysis – an expert from the Institute for Strategic and Interregional Studies under the President of the Republic of Uzbekistan (ISMS).

Academic community – a specialist in Chinese studies from the University of World Economy and Diplomacy (UWED).

Economic perspective – an independent economist specializing in infrastructure project financing and debt burden.

Environmental perspective – an employee of the State Committee for Ecology and Environmental Protection (a conditional expert involved in the environmental assessment of infrastructure projects).

This selection of respondents allows us to cover different perspectives: from practical design and public policy to economic and environmental assessment.

The interviews were semi-structured, which made it possible to follow a pre-prepared list of questions, but at the same time maintain flexibility and clarify details during the conversation. The average duration of interviews was 45-60 minutes; they were conducted in Russian in the format of face-to-face meetings, as well as online meetings via Zoom.

All respondents answered the same basic set of questions in two blocks:

Part 1: spatial planning in Uzbekistan (coordination of government levels, institutional challenges, the role of third parties, problems, and the influence of global trends).

Part 2: the impact of the BRI Initiative on the transport system, logistics, spatial development, institutional coordination, as well as social and environmental aspects.

All interviews were recorded in the form of detailed notes; audio recording was used only with the consent of the respondent.

The interviews were transcribed and coded according to key themes (institutional coordination, external actors, challenges, the BRI influence, sovereignty risks, and environmental impacts).

Thematic analysis was used: identifying recurring patterns in the responses, comparing respondents' points of view, and identifying similarities and differences.

Particular attention was paid to differences in emphasis: for example, government officials emphasized institutional and technical issues, while the economist focused on financial risks and the ecologist on long-term environmental costs.

Data Collection

The study relies on a diverse set of data sources, including official reports, policy documents, and government records related to the BRI projects in Uzbekistan. Additionally, publicly available spatial and urban development data are utilized to contextualize the findings and provide a broader framework for analysis. Ethical considerations are maintained to ensure that all data sources are credible and properly cited.

The research incorporates a case study approach to examine specific BRI-related projects within Uzbekistan, such as transport infrastructure, industrial zones, and urban redevelopment initiatives. By focusing on concrete examples, the study identifies best practices, challenges, and localized impacts. Comparative analysis with other Central Asian countries is also undertaken to highlight similarities and differences in spatial planning strategies under the BRI.

These tools and techniques collectively enable a holistic analysis of how the BRI influences spatial planning, ensuring a rigorous and well-rounded methodological framework for the study.

3.4. Ethical Considerations

In the exploration of the BRI Initiative's impact on spatial planning in Uzbekistan, ethical considerations are paramount in upholding the integrity and well-being of all participants. Ethical principles guide the research process, addressing key concerns to establish a framework for responsible conduct.

The principle of participant confidentiality is foundational. To protect personal information, all participant data and responses are coded and anonymized. This measure ensures that individuals' privacy is upheld throughout the research. Obtaining informed consent is a crucial step in ethical research. Government officials, urban planners, and local experts are fully informed about the research's goals and nature. Consent is sought, emphasizing transparency and respect for participants' autonomy.

Maintaining transparency in research objectives is imperative. Clear and accessible communication of objectives, methods, and expected outcomes is provided in participant notifications and final reports. This transparency helps build trust among participants and the broader research community.

To foster a feedback-oriented approach, participants could receive feedback on the research results. This practice promotes openness and honesty, acknowledging the contributions of participants and ensuring a reciprocal exchange of information. These ethical considerations collectively establish a framework for conducting research that is ethically sound and responsible. By addressing participant confidentiality, informed consent, transparency of research objectives, and feedback mechanisms, the research endeavors to safeguard the interests and well-being of all involved parties.

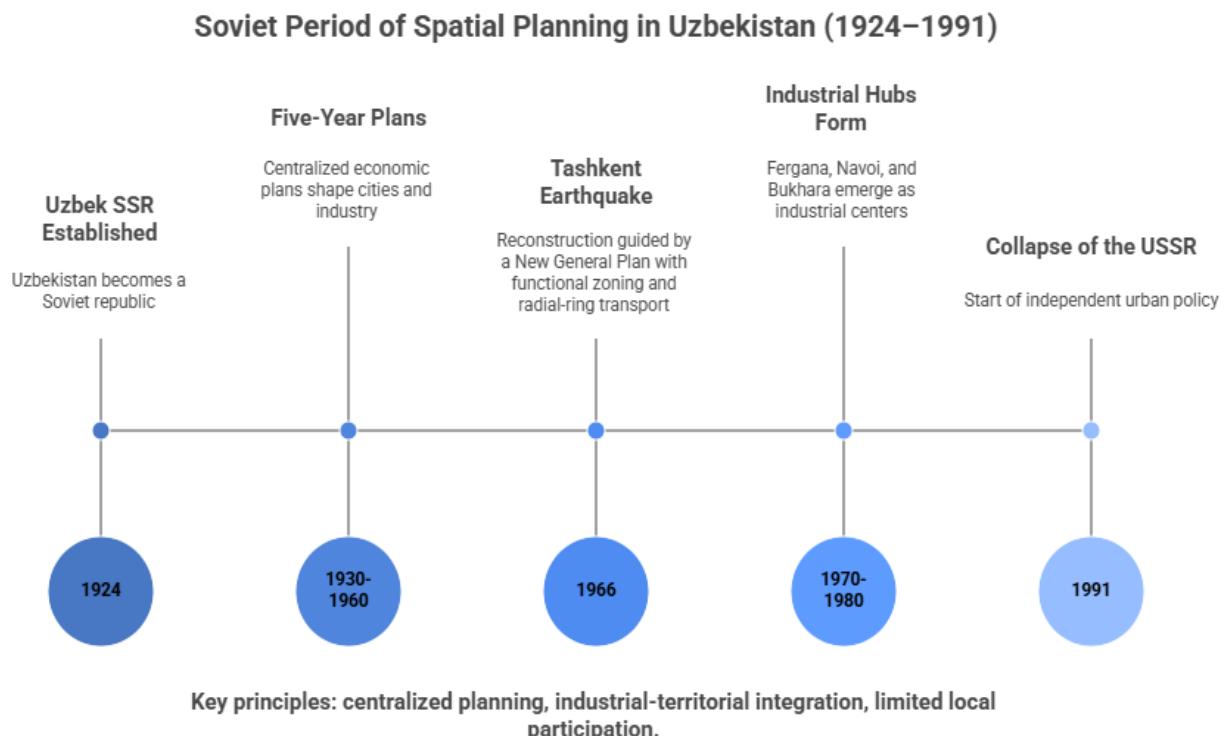
Chapter 4: Spatial Planning in Uzbekistan

4.1 Analysis of Spatial Planning in Uzbekistan Before 1991, During the Years of Independence, and Up to the Present Day. Key Principles.

Studying spatial planning in Uzbekistan is important for understanding the evolution of the country's urban development policy from the Soviet period to the present day. An analysis of planning before 1991 and during the years of independence allows us to identify key principles of territorial governance and the influence of historical decisions on the contemporary development of cities and regions in Uzbekistan. This research aims to provide a foundation for evaluating the effectiveness of existing planning tools and identifying promising solutions within the context of contemporary sustainable development.

Figure 5. Timeline of spatial planning in Uzbekistan during the Soviet Period

Source: Author's own elaboration



Spatial planning during the Uzbek SSR

Studying the historical context of Uzbekistan in general, it's obvious to conclude that before independence, the main influence on urban and spatial planning in Uzbekistan, as well as for any other area, was the policy of the Soviet Socialist Republics (USSR) during the existence of the Uzbek Soviet Socialist Republic (UZSSR) from 1924 to 1991. At that time, urban and spatial planning was part of the centralized management system, which reflected the general principles of a planned economy and social organization. (Dadabaev, Timur, 2016)

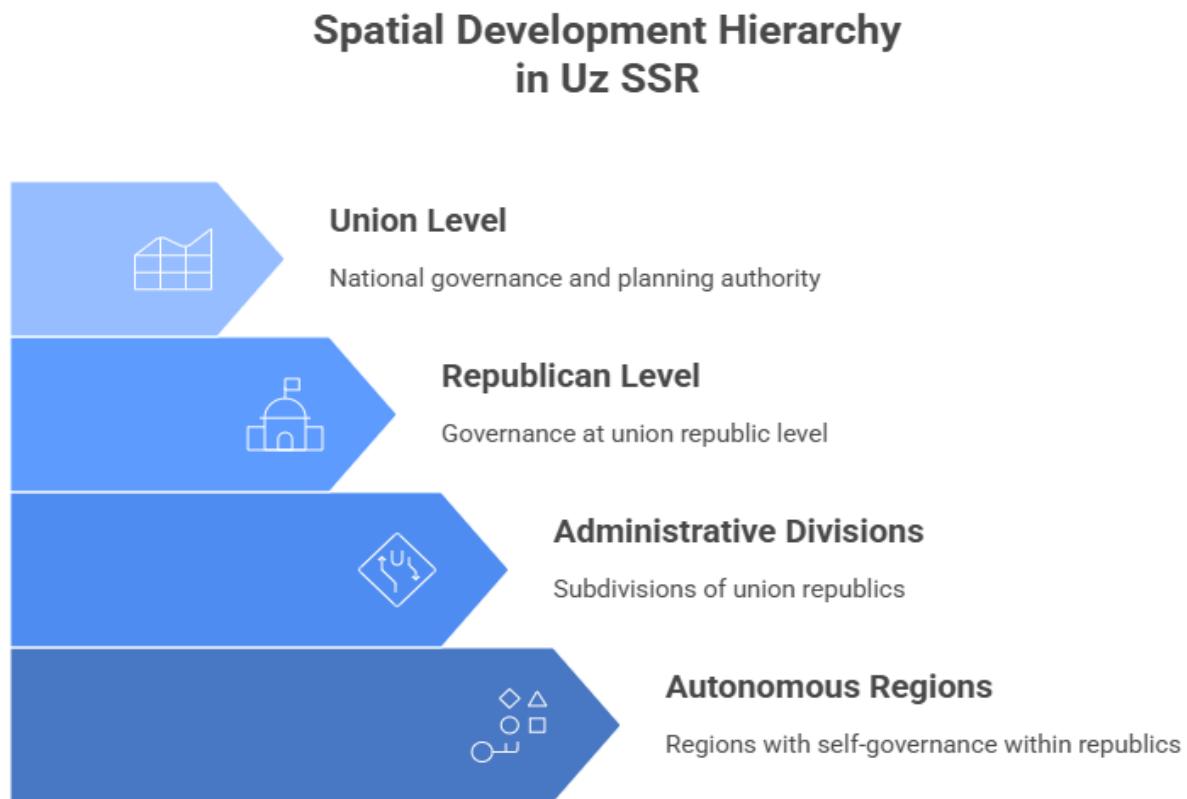
The planning system in Soviet times had a clear hierarchical structure and declared the need for an integrated approach to managing the development of the territory; however, the focus was on sectoral priorities rather than territorial ones. Basically, planning was aimed at the uniform distribution of economic activity and was carried out to accommodate productive forces. (Kumo & Shadrina, 2021)

To plan the country's spatial development, various documents were created at three levels of governance: union, republican (level of union republics), administrative-territorial division of union republics (autonomous republics, territories), and autonomous regions and autonomous districts (cities of republican subordination). (Dadabaev, Timur, 2010)

The main management tool was the five-year plans for economic and social development. Within the framework of these plans, goals and objectives for the development of cities and regions were defined, including the construction of housing, infrastructure, industrial facilities, and social institutions. (Måns Svensson, Rustam Urinboyev, 2018)

Figure 6. Spatial Development Hierarchy in USSR

Source: Author's own elaboration (data visualized with AI assistance).



Urban planning included the design of new neighborhoods, the reconstruction of existing areas, and the development of infrastructure. Much attention was also paid to the creation of green areas, cultural and educational institutions. All aspects of planning were controlled by various state committees and ministries, such as the State Committee for Architecture and Construction, the Ministry of Housing and Public Utilities, and others.

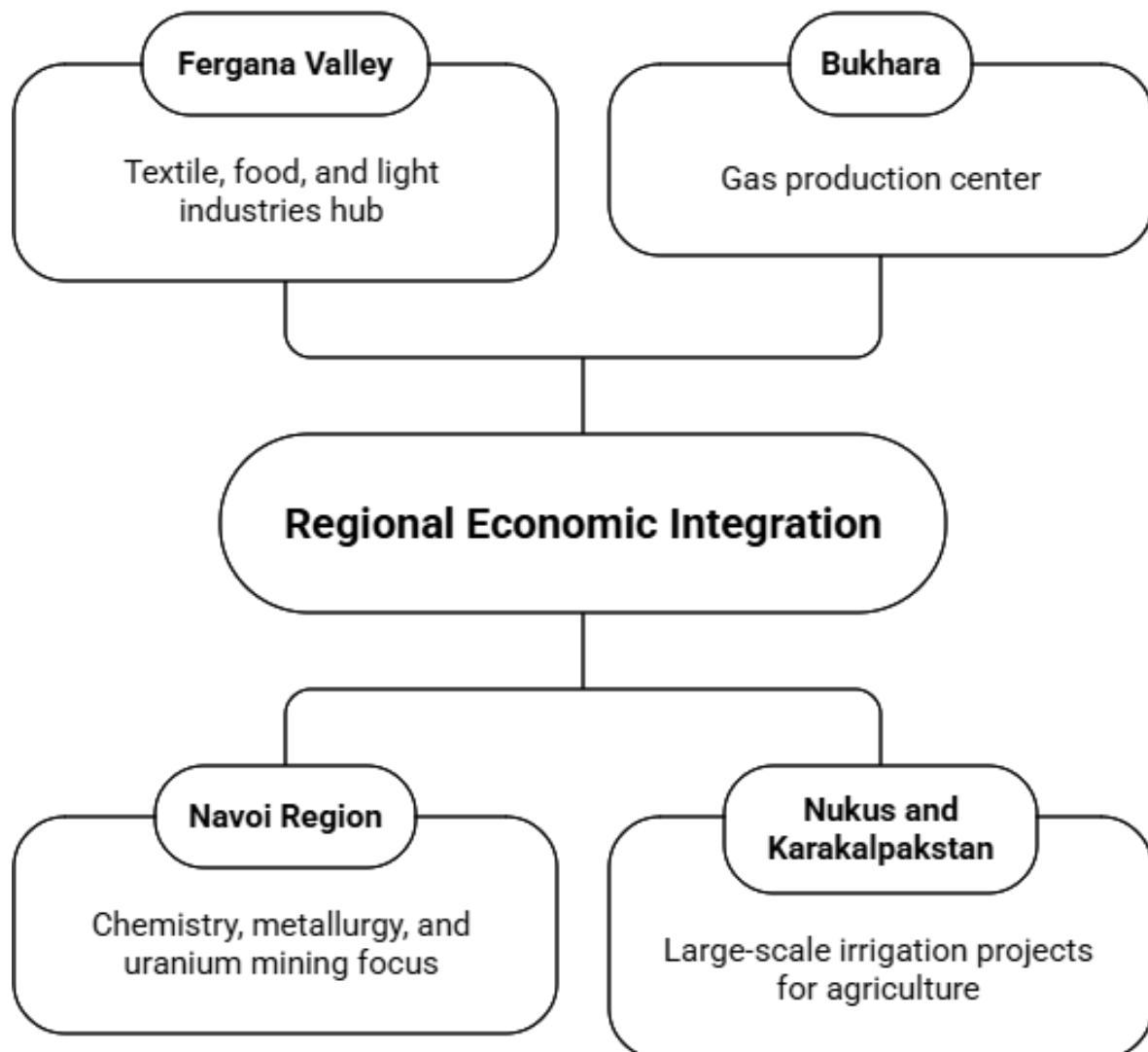
Scientific justification for the optimal choice of locations for planned objects was considered especially important; mathematical methods and models were widely used. A unique experience that has not lost its significance is the development of the General Scheme for the Placement of the Country's Productive Forces. (Stronski, 2010). (The General Plan for the Distribution of the Country's Productive Forces, n.d.)

The influence of the General Scheme for the Distribution of Productive Forces on the spatial planning of Tashkent and Uzbekistan was fundamental and decisive for the further development of the region. During this period, the basic principles of urban planning and territorial organization were laid down, which in many ways remain relevant today. The example of Tashkent is especially indicative.

After the devastating earthquake of 1966, the capital of the Uzbek SSR became a kind of experimental platform for the implementation of the latest Soviet urban planning concepts. A general plan (The General Plan for the Distribution of the Country's Productive Forces, n.d.) for the city's reconstruction was developed, on which leading architects from the Soviet Union worked. The plan provided clear functional zoning: the city was divided into industrial, administrative, residential, and recreational areas. A radial-ring system of transport highways was incorporated into the urban planning structure, enabling effective connectivity between new and old districts. (Kulahmatovich & Bohodirovich, 2021)

Figure 7. Spatial distribution of BRI infrastructure projects in Central Asia.

Source: Author's own elaboration (data visualized with AI assistance).



At the republican level, spatial planning in Uzbekistan was conducted in line with the creation of a system of supporting cities and industrial hubs. Within the framework of the implementation of the General Scheme, each region of the republic developed its own economic specialization:

For example, the Fergana Valley started developing as a center of textile, food, and light industries. The Navoi region was transformed into a more industrial cluster with a focus on chemistry as well as on metallurgy and uranium mining. Whereas Bukhara became an important center of gas production. For supporting agriculture, large-scale irrigation projects were conducted in Nukus and Karakalpakstan. Consequently, these reformations led to a targeted integration of economic, transport, and energy ties between the regions of the republic. (Navoi Region Strategy, 2024)

As a result, Uzbekistan received a balanced territorial-production structure, in which each part of the republic could play its role in a single economic system. Spatial planning of the Soviet era formed the basis on which both individual cities and regions were subsequently built and modernized. (Stronski, 2010)

In general, urban and spatial planning in the Uzbek SSR seemed to be more oriented towards achieving the goals set by central plans and directives, with an emphasis on industrialization. Most of them were directed at social security and infrastructure development. The existing spatial organization, to a greater extent, was consistent with the socio-economic policy of the planned economy. But the main drawback of such a system was the lack of public participation in the planning process and, thus, the underestimation of public interests. (Stronski, 2010)

Spatial planning after the collapse of the Uzbek SSR, 1991–1999

The 1990s were a time of profound institutional and structural transformations for Uzbekistan, caused by independence and the transition from a centrally planned economy to a market economy. This transition affected all spheres of life, including urban development, which found itself in conditions of institutional disorganization, a shortage of qualified personnel, and financial resources. Local authorities received greater autonomy but did not have a sufficient project and analytical base for long-term planning, which is confirmed by reports of the United Nations Development Program (UNDP), according to which, in the 1990s, local governments in Uzbekistan did not have the necessary resources for effective management of urban development. (UNDP, 1999)

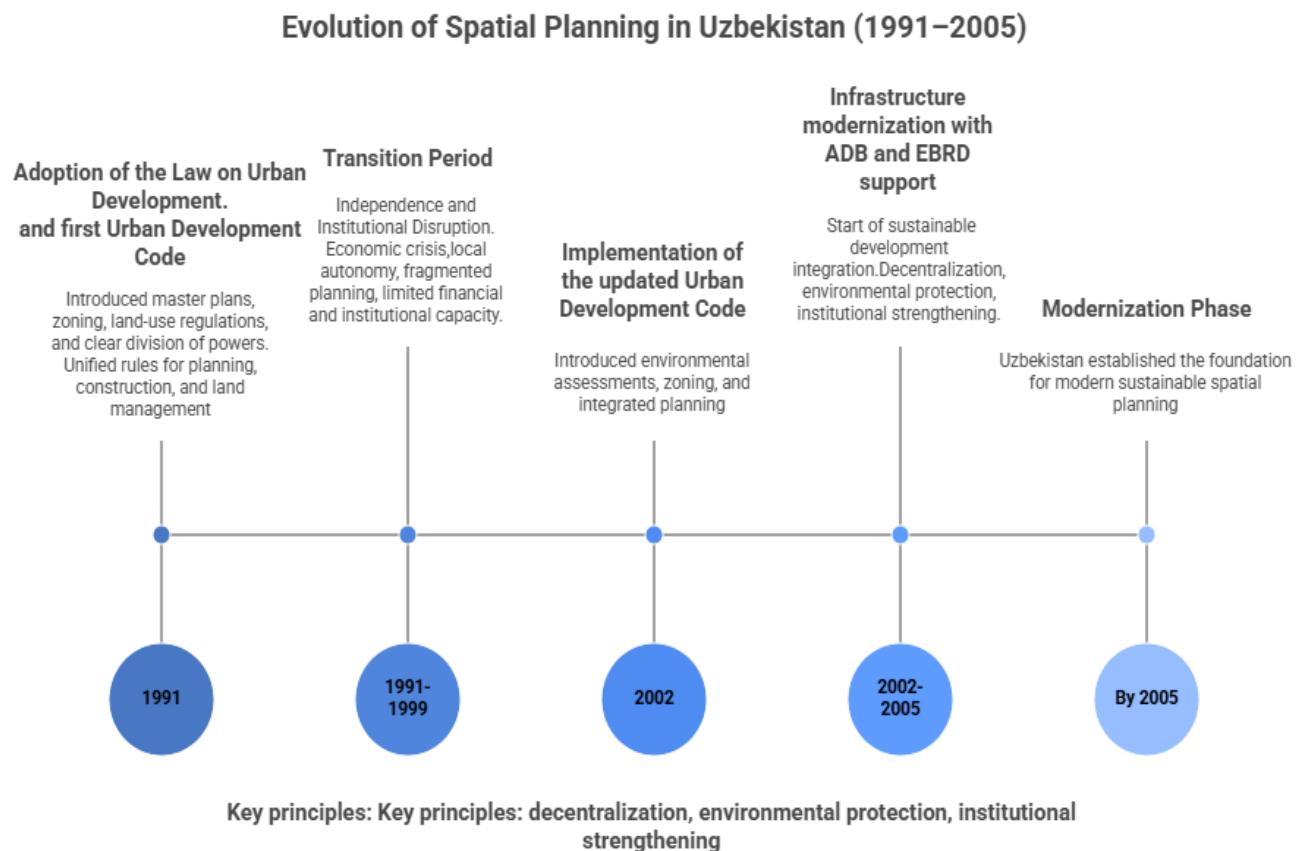
In the context of the economic crisis of the 1990s, many investment projects aimed at modernizing urban infrastructure were suspended or implemented with multi-year delays. The decline in gross domestic product per capita, according to the World Bank, amounted to more than 18% in the period 1991-1995, which led to a sharp decline in investment in infrastructure projects. Many of them, including the modernization of water supply, sewage, and transport logistics systems, were suspended or implemented with multi-year delays. (World Bank, 2002)

Urban planning practice during this period acquired a predominantly reactive character. Management decisions were often situational and short-term, aimed at eliminating the most acute problems - providing emergency housing, urgent restoration of utility networks, and eliminating the consequences of man-made and natural disasters. This corresponded to the general context of the transition period when strategic planning was supplanted by current anti-crisis management.

However, it was during this period that fundamentally novel approaches to urban environment management began to be developed. Since the mid-1990s, with the support of international organizations (in particular, UNDP, the World Bank, and GTZ), pilot projects aimed at developing sustainable urban practices implemented in Uzbekistan laid the foundation for the subsequent institutionalization of a systemic and comprehensive approach to territorial development. This became especially noticeable in the early 2000s with the adoption of the National Spatial Development Strategy and the introduction of long-term planning principles. (World Bank, 2002)

Figure 8. Evolution of Spatial Planning in Uzbekistan (1991-2005)

Source: Author's own elaboration



Future Uzbek Spatial Planning Based on the Law on Urban Development and the Urban Development Code.

Urban Development Act 1999:

The first move towards urban planning systematization in Uzbekistan was the adoption of the Law on Urban Development in 1999. This seemed to be a piece of legislation that contributed significantly to the processes of bringing about changes aimed at streamlining urban development operations. However, such influence was later to increase and extend with the introduction of the Urban Development Code in 2002.

The implementation of the Law of the Republic of Uzbekistan on Urban Development Activity, dated November 26, 1999, appeared to be a critical point in determining the strategy of urban development in the country in post-Soviet times. The law aimed to give a legal framework to address the growing urbanization. (Law of the Republic of Uzbekistan "On Urban Development Activities", 1999)

It was the pioneer attempt by law to structure the relationships involving the management of territorial planning, design, construction, and land use in harmony with the objectives of a sovereign state.

Key provisions of the law: normalization and institutionalization

The 1999 Act laid down the spirit of the urban development process, including the complexities of planning, the proper utilization of land, asset sustainability in relation to sustainable development, as well as the protection of stakeholders' rights in the urban development process. Creation of necessary master plan development of inhabited areas acted as a cornerstone of application of these principles (Law of the Republic of Uzbekistan No. 841-I, Art. 10). Such papers had to incorporate the existing topography of operations of the area, as well as the action plan on transformation of the place, such as infrastructural advancement, environmental protection and maintenance of cultural resources (UNECE, 2008).

In addition to this, legislative specifications concerning the process of compilation of design documentation were realized, which represents a great breakthrough in the process of standardization of architecture and construction design development and the supervision of the quality of buildings. Before the legislation, such procedures were largely controlled by departmental policies, which were usually centered around the Soviet model (UNECE, 2008).

Land relations in the structure of the law.

The act was centered on regulating land relations in the urban development context. The procedures used to allocate the land parcels were clearly outlined along with the justification, the type of ownership, how the right must be registered, and systems used to manage the ownership to the intended purpose (Law of the Republic of Uzbekistan No. 841-I, Article 1315). This was in line with the world's best practices in land management, that is, FAO and UN-Habitat guidelines on executing transparent and fair land utilization (UN-Habitat, 2003). The act has defined the roles and rights of owners and developers, such as liability for infringements of building laws, design, and sanitation and environmental provisions.

Distribution of powers and public administration

The basic element of the law was the clear separation of power between the government levels as pertaining to the management of urban development. The act outlined the responsibility of municipalities to implement the national urban development policies on the ground, within the strategic supervision of national governments such as the State Committee on Architecture, the Ministry of Construction, and the State Committee on Land Cadaster (Dadabaev, 2016).

This was aimed at improving the manageability of the process and preventing the unplanned process development as was being experienced in several locations during the 1990s.

Likewise, the Act introduced mandatory regulations in the examination, sanction, and regulation of design records, hence the development of a transparent outline in the supervision of architecture and construction.

The first urban development code of 1999:

The Republic of Uzbekistan adopted the first Urban Development Code on November 26, 1999. It was a seminal step toward achieving the modernization of the urban development law in the country that was meant to harmonize and coordinate all the aspects of urban development, such as planning, building, and the way of land resources. (Urban Development Code, 1999)

The basic guidelines and requirements of urban development operation, such as the coordination and control processes, the design and manufacture guidelines, and the entitlements and obligations of the numerous stakeholders involved in the operation of urban development, were outlined by the Code. Its law maintained the centrally planned treatment characteristic of a planned economy in the provision of urban development. The major ideas and rules were developed by the powers of the central government.

The code found the creation of procedures for zoning as well as territorial planning. It contained conditions for developing master plans of urban and populated areas, as well as zoning of the land to be used according to different purposes (residential, commercial, industrial, etc.). It had environmental protection provisions and checkpoints to alleviate the negative impacts of construction on the community and the ecosystem. (Urban Development Code, 1999)

Major agencies responsible for urban development were the State Committee of Architecture and Construction (Goskomarchitecture), the Ministry of Construction of the Republic of Uzbekistan, and the State Committee of Land Resources, Geodesy, Cartography, and Cadaster.

Spatial planning in Uzbekistan in the period from 2000 to 2005.

Between 2000 and 2005, there was the institutional formulation of the urban development strategy in Uzbekistan. The transition of the Soviet totalitarian paradigm into a more numerical way of thought and normatively laid ground lasted at this stage. The turning point came in the implementation of the new Urban Development Code in 2002, by laying the basis of integration in the territorial planning of the country, requiring that municipalities develop master plans, introducing zoning and environmental assessment standards (Ministry of Justice of the Republic of Uzbekistan, 2002). It was in the country's urban development practices that the formalization of sustainable development began.

During these years, much attention was paid to the modernization of infrastructure roads/water supply sewage systems, with the financial resources of both domestic and foreign sources; The Asian Development Bank and the European Bank of Reconstruction and Development were especially active. There was rampant development in housing, with commissions per year reaching 5 to 7 million m² (Goskomstat, 2006). However, such processes were marked by the low quality of jobs, violation of construction laws, and excessive bureaucracy. Transparency International reports that corruption in the building industry has been aggravated by challenges during the licensing process (TI, 2004).

Environmental hazards have also increased because of the growth of development. The introduction of mandatory environmental tests was the initial attempt to evaluate the effects on the environment in urban development, yet the process was still not fully practiced (Goskompriroda, 2003).

Consequently, despite the continuing difficulties, it was in 2000–2005 that the foundations of modern urban development regulation were laid: strategic documents appeared, institutions were strengthened, and the integration of principles of sustainability and decentralization began. This became an important preparation for the more mature reforms of the following decade.

In conclusion, it should be noted that the development of urban and spatial planning in Uzbekistan shifted from Soviet centralized systems to create its own national urban development policies. The research shows that Soviet-era urban development in Uzbekistan relied on standardized planning systems to distribute productive forces. The main weaknesses of this approach became evident through its restricted adaptability and its failure to consider local requirements.

The country experienced an institutional power vacuum, together with restricted funding after gaining independence, but international organizations started building reform foundations during the 1990s. The Law on Urban Development (1999) and Urban Development Code (2002) established zoning principles and general planning and environmental assessment standards, which became the foundation for modern spatial planning in Uzbekistan by the mid-2000s.

4.2 Current Structure of Uzbekistan's Spatial Planning at Regional, National, and Local Levels

A historical analysis of spatial planning in Uzbekistan reveals how past approaches have influenced the formation of the modern territorial governance system. The experience of the Soviet period and the early years of independence appear to demonstrate the basis for understanding the current structure of spatial planning, which will be discussed in this chapter.

The spatial planning system of Uzbekistan was developed through successive reforms, which integrated domestic procedures with international best practices. The state now plays a larger role in territorial development because of fast urban expansion and economic changes, which led to the establishment of a structured planning system that spans from national to local levels. (Uz Daily, 2023)

The Ministry of Construction and Architecture leads national strategic planning efforts through the creation of the General Scheme of Territorial Planning and regulatory documents. The regional authorities modify national plans to fit their specific needs before local khokimiyats execute these plans through project approval and urban development management. The established hierarchical structure allows for effective system control and local area-specific implementation. (Uz Daily, 2023)

Key instruments of spatial policy include general and master plans, prepared by specialized institutions such as the State Unitary Enterprise "Tashgiprogor" and "TashkentboshplanLITI". These institutions possess the expertise and resources to handle complex design and analytical tasks. For instance, "Tashgiprogor" has developed over 200 residential buildings, 100

administrative, and 70 social facilities in recent years, demonstrating its scale of involvement in urban transformation. (State Unitary Enterprise “Tashgiprogor”, n.d.)

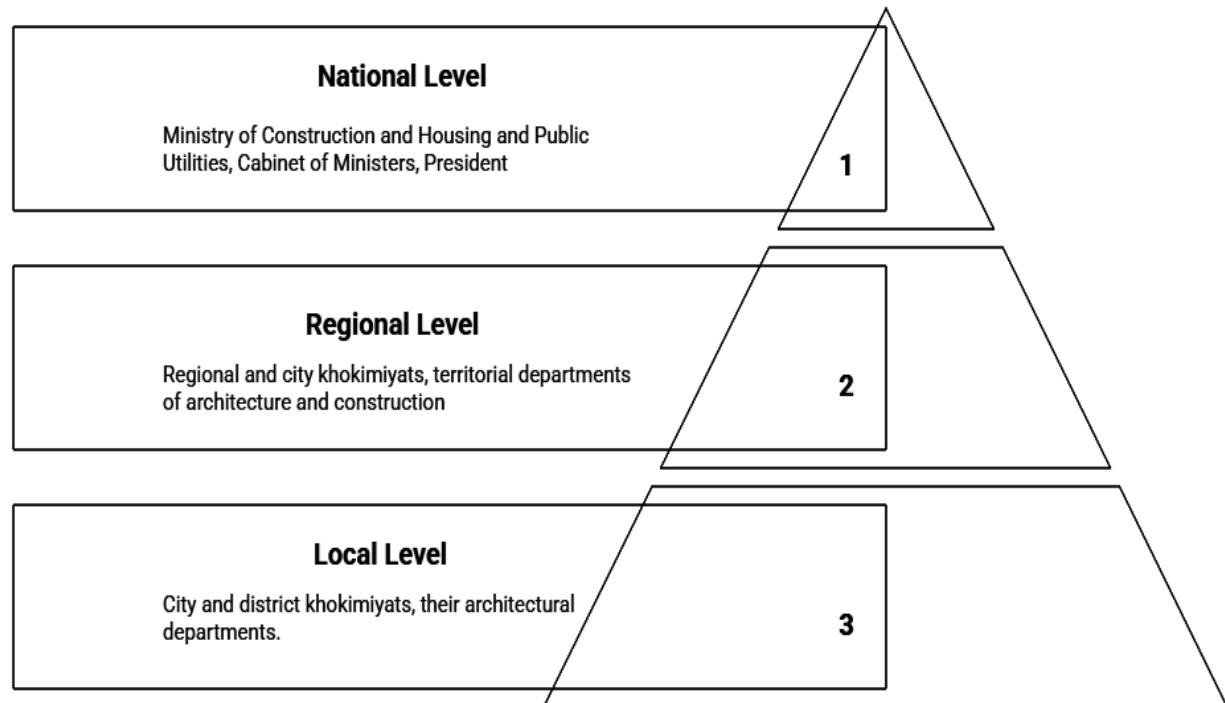
The approval process for plans consists of multiple stages because city general plans need approval from local khokimiyat and the Ministry of Construction confirmation, but nationally significant documents need approval from the Cabinet of Ministers. The President does not directly validate urban planning documents, but his decrees and strategic programs determine sustainable development priorities, which direct the national urban development path.

The interviews conducted for this research reveal that international partners also play a significant role. Specifically, respondents agreed that organizations such as the World Bank, Asian Development Bank, UNDP, EBRD, and USAID provide technical and financial support for planning and infrastructure reforms. Programs like the World Bank-supported “Modernization of Urban Infrastructure” improve water supply and transport sustainability, while international consortia contribute to long-term strategies, such as the General Plan of Tashkent until 2045, developed with teams from Singapore, the UK, Germany, China, and other countries. (Interview findings, 2025).

This is a schematic representation of the modern spatial planning structure in Uzbekistan:

Figure 9. Uzbekistan's spatial planning structure

Source: Author's own elaboration (data visualized by AI assistance)



National level

At the national level, the spatial planning system in Uzbekistan remains centralized and hierarchically organized. The Ministry of Construction and Housing and Communal Services operates as the main coordinating body through its Main Department for Urban Development and Architecture. The department creates regulatory documents and technical standards, and methodological recommendations while monitoring the execution of master and territorial plans across the nation. (Uz Daily, 2024)

The spatial planning institutional framework depends on three main strategic documents, which include the General Scheme for Population Settlement and territorial planning schemes at the republican level, and socio-economic development programs. These documents are developed with the participation of specialized research institutions (for example, the Research Institute "Gosarkhitektstroy"), design organizations, as well as national and international consultants. (Asian Development Bank, 2020).

Formally, planning is based on a set of technical, economic, demographic, and environmental parameters. However, in practice, the content of strategic documents is significantly influenced

by the political guidelines formed by the Cabinet of Ministers and the Presidential Administration (UN-Habitat, 2022).

The decision-making process in the spatial planning system is distinctly vertical, top-down. The initiative to amend or develop new strategic plans may come from relevant ministries and agencies, but final approval is carried out exclusively at the highest level - through decisions of the Cabinet of Ministers or presidential decrees (Resolution of the President of the Republic of Uzbekistan No. PP-4896, 2020; World Bank, 2021).

As one urban planning expert noted during the interviews, “Even when local authorities propose innovative projects, they often have to wait for approval from the top, which slows down the implementation and limits local initiative.”

Despite official procedures including stages of approval by local governments (khokimiyats) and public hearings, the degree of involvement of local communities and stakeholders remains extremely limited, which makes public participation processes largely formal (OECD, 2020).

The financial support for spatial planning in Uzbekistan stems from three main sources, which include state budget funds and foreign investments, and international technical assistance programs. The country receives substantial support from external partners through China's BRI Initiative and financial backing from the World Bank and Asian Development Bank (ADB, 2020; World Bank, 2022; the BRI Portal, 2021). However, the need for external funding development principles leads to selecting projects that generate fast economic returns and hold political significance regardless of their alignment with sustainable territorial development. (UNDP Uzbekistan, 2021).

The government controls spatial planning in Uzbekistan through a centralized system that enables government bodies to prioritize large infrastructure and modernization projects. The strategic documents of Uzbekistan contain goals that do not match the actual implementation results that occur in the field. The current institutional framework shows restricted adaptability while political and economic interests dominate sustainable spatial development principles. (UN-Habitat, 2022).

Regional level

The administrative system of regions, cities, and districts operates as the framework for implementing spatial planning at the regional level in Uzbekistan. The khokimiyats, along with the Ministry of Construction regional offices and territorial architecture and urban development departments, function as the main authorities for local planning activities. The national level sets

general priorities and strategic directions, but local planning at this stage focuses on practical applications through land management and project execution and urban and rural infrastructure development. (Uz Daily, 2024)

The main tool for spatial planning at the regional level remains the master plans of cities and towns, as well as territorial planning schemes for districts and regions. The development process of these documents starts with orders from local khokimiyats or higher authorities, before receiving approval at regional levels, and then ministry levels, and Cabinet of Ministers approval for strategic objects. The central government keeps control over essential decisions, although local authorities typically start the process. This emphasizes that even regional planning largely depends on the centralized management system. (United Nations Economic Commission for Europe, n.d.)

Formally, regional structures have a certain autonomy in making urban planning decisions, especially in terms of implementing local development programs, land distribution, construction, engineering preparation of territories, and improvement. However, in practice, any major changes in the settlement structure, construction, or repurposing of land require coordination with national structures and must be included in already approved schemes. This leads to the fact that local planning is often reactive rather than proactive: it does not form a strategy but adapts to decisions already made "at the top".

However, the implementation of digitalization in regional planning has gained momentum through GIS system deployment and electronic cadaster development, and construction application portal creation during recent years. The digital systems create opportunities for enhanced transparency and operational efficiency. The implementation of these systems shows wide discrepancies between regions because Tashkent and major cities lead the way in development, but remote areas maintain paper-based archives and outdated procedures. (Avezbaev et al., 2023), (World Bank, 2025)

Thus, the regional level of spatial planning in Uzbekistan is an area where national strategy, local needs, and real resource constraints intersect. Despite the formal existence of powers, the autonomy of regions in practice remains limited. The effectiveness of the implementation of spatial policy largely depends on the quality of interaction with central authorities, the professional training of specialists at the local level, and the degree of involvement and initiative on the part of local administrations.

Local level

At the local level, spatial planning in Uzbekistan is conducted within the boundaries of cities, towns, and rural settlements. The key role here is played by city and district khokimiyats, as well as their architectural and construction departments. At this level, urban development policy is practically implemented: land plots are distributed, construction permits are issued, compliance with approved plans is checked, and the development of the urban environment is managed daily. (API-Portal, 2025)

The khokim of a city or district has executive power and makes decisions on local issues, including the implementation of the general plan, reconstruction of neighborhoods, landscaping of territories, and resettlement of the population if necessary. He can initiate the preparation of new planning or zoning projects, order the development of detailed plans, and participate in interdepartmental approvals. However, as at the regional level, the khokim's actions are limited by approved national and regional documents. Any decision that goes beyond the current general plan or violates land use standards must be agreed upon with higher authorities. (API-Portal, 2025)

The most active changes occur at the local level: construction of new neighborhoods, spot development, demolition of dilapidated buildings, and development of infrastructure. Here, the influence of investors and private developers is especially acute, who often dictate priorities for spatial development, especially in cities with an elevated level of commercial interest. This gives rise to many conflict situations: construction near schools and hospitals, destruction of parks, dense development in courtyards, demolition of historical buildings, and widespread cutting down of trees. (Maili.uz, 2025)

One of the main problems is the use of the ground floors of apartment buildings for non-residential premises, most often for commercial offices to serve the interests of private entrepreneurs. This creates great inconvenience for residents, since green areas and vegetable gardens, green spaces, and trees are eliminated to free up the territories adjacent to the house. Private entrepreneurs often occupy parking lots belonging to the residents of these buildings and fill the territory with cars, blocking residential areas and sidewalks. (Kun.uz, 2025)

In terms of considering the interests of the local population, ideally, the planning process should include public consultations, during which citizens can familiarize themselves with detailed planning projects and express their opinions. However, in most cases, these procedures are either not carried out or are superficial: information is published formally, on unvisited websites, without a full-fledged dialogue with residents. Sometimes activists and local communities oppose

specific developments, and then protests, petitions, and media coverage are possible. In some cases, public pressure leads to projects being stopped or revised, but in general, the level of institutionalized public participation in planning remains low, and their opinions are most often not considered. (Kun.uz, 2024)

The local level suffers from a shortage of qualified personnel, a weak material and technical base, and dependence on decisions taken above. This limits the possibilities for sustainable and inclusive development. However, it is at this level that the everyday living environment of citizens is formed - from the quality of sidewalks to the location of schools and parks - and therefore spatial planning issues here acquire the greatest practical significance. (interview findings, 2025)

Thus, the main function of local spatial planning in Uzbekistan consists of executing decisions from upper levels while maintaining flexibility to handle local issues. The actual citizen involvement in urban development remains restricted because state projects and non-governmental business interests receive precedence over public needs.

Coordination of government levels and institutional challenges

In the interviews, some experts shared their views on the coordination between levels of government in Spatial Planning in Uzbekistan. According to the respondents, it turned out that all respondents acknowledge the formal hierarchy in Uzbekistan's spatial planning system, but they emphasize the differences between official procedures and actual practice.

Here is how the experts' opinions were distributed:

Table 4. Expert's opinion distribution table

Source: Author's own elaboration

Respondent	Key Observations	Institutional Challenges	Comments on Transparency and Public Participation
Interview #1 (Ministry of Construction and Housing official)	Formal hierarchy exists national level, develops strategies, regions adapt them, and local authorities implement.	Regional plans are not always aligned with master plans; local administrations often act reactively rather than strategically.	Public consultations are mostly formal, which reduces public trust and can lead to local conflicts.
Interview #2 (SMS expert, strategic and interregional research)	Coordination is gradually improving national strategies that set broad directions, while regional and local authorities consider local specifics.	The effectiveness of long-term strategic planning depends on resources and monitoring capabilities.	Efforts are being made to improve access to plans and stakeholder involvement.
Interview #3 (TashkentboplanLTI staff)	Coordination generally functions.	Frequent delays in project approvals between regional and national authorities; different agencies use their own planning approaches.	Mechanisms for public consultation are being improved, but citizen participation in territorial planning remains limited.
Interview #4 (Economist)	Coordination works through financial and investment directives.	Delays in budget approvals and resource allocation; projects often require approval from multiple ministries, which increases implementation time.	Lack of transparency in resource distribution; weak integration of long-term financial strategies with territorial plans.
Interview #5 (Environmental/sustainable development specialist)	Coordination is improving due to the National Sustainable Development Program 2030 and the Territorial Development Plan.	Late integration of environmental assessments; fragmented regional data on soil, water, and biodiversity.	Formal environmental hearing exists, but their results are rarely reflected in final plans.

The evaluation of spatial planning coordination in Uzbekistan through interview analysis reveals both matching and conflicting opinions about its effectiveness. All interview participants agree that Uzbekistan has an official hierarchical system that directs national strategies to guide regional and local execution. The respondents agree that coordination faces operational challenges because of delayed processes, governance level discrepancies, and separate agency approaches.

Institutional challenges appear in different forms. The officials and practitioners agree that the current system of planning between national and local levels can be inefficient because of the lack of alignment between the two. The design specialists identify that the different planning approaches used by various agencies create inconsistencies in the planning process.

Economists find financial barriers that prevent project implementation because multiple ministers need to approve projects, and budget distribution remains unclear. Environmental experts point out that ecological assessments are added too late to the planning process, and environmental data remains scattered, which hinders effective cross-sectoral coordination. The strategic research expert presents an optimistic view, noting that coordination shows signs of improvement, while also acknowledging ongoing challenges due to resource constraints and limitations in the monitoring system.

The interviews show that transparency and public participation exist only as formal procedures. The respondents agree that public hearings and planning document access exist as formal procedures, yet they do not impact final decisions, which damages public trust and inclusiveness. The experts have different views about transparency and stakeholder involvement because some see progress in these areas, but others believe current practices lack real substance.

Overall, the research suggests that Uzbekistan's spatial planning system operates under a robust hierarchical framework yet faces ongoing challenges from institutional fragmentation and bureaucratic delays, and the formalization of participatory processes. Although ongoing reforms and international initiatives, such as the National Sustainable Development Program 2030, contribute to gradual improvements, the system still struggles to achieve strategic coherence, transparency, and genuine inclusiveness.

4.3 Modern Instruments (tools) of Uzbekistan's Spatial Planning

Having considered various approaches to classifying spatial planning instruments, including the models of Diller (2008), Allmendinger (2009), and Stead (2021), Arnstein's classic "ladder of participation" (1969), the European ESPON model, and Christopher Hood's (1986) model, in this chapter, we decided to focus on Diller's classification. In our view, it most fully and accurately reflects the structure of spatial planning instruments in Uzbekistan, allowing for the simultaneous consideration of formal and informal mechanisms at different spatial levels - from the national to the micro district level.

The classification of spatial planning instruments according to Diller (2008) involves dividing them into five main groups: legal, planning, procedural, safeguarding, and method based. Each group of instruments can be formal or informal, reflecting the degree of their binding force and institutionalization. (Diller, 2018)

Legal instruments include laws, building codes, and regulations, while planning instruments include master plans, strategies, and sectoral plans. Procedural tools are aimed at organizing stakeholder coordination and participation processes, safeguarding tools focusing on resource

and financial support for planning, and method-based tools focus on developing methodologies, analytical approaches, and decision-support tools.

This structure allows for the simultaneous consideration of formal and informal mechanisms at different spatial levels, making Diller's classification suitable for analyzing the specifics of planning instruments in Uzbekistan. (Diller, 2018)

According to Diller's classification, each of these groups is considered within the context of a specific territorial level, which is divided into: national (at the state level), regional level (at the regional level), city (at the city level), and local (micro level) (at the district/mahalla level).

Table 5. Schematic representation of planning instruments in Uzbekistan

Source: Author's own elaboration

Level	Formal Instruments	Informal Instruments
National	<p>LEGAL: Law on Architecture and Urban Planning (2002), Urban Planning Code (2021), Land Code (1998), laws on environmental protection and cultural heritage; SNIPs; Presidential decrees and Cabinet resolutions</p> <p>PLANNING: General Settlement Scheme, territorial strategies, sectoral programs (transport, energy, environment)</p> <p>PROCEDURAL: State Environmental Expertise (SEE), inter-agency approvals, adoption of national strategies and plans</p>	<p>National development strategies ("New Uzbekistan"), BRI / "One Belt One Road" initiatives, and infrastructure modernization programs</p>
Regional	<p>LEGAL: Resolutions of regional khokimiyats, regional urban planning regulations, detailing of national laws and norms</p> <p>PLANNING: Territorial planning schemes of regions, district master plans, regional sectoral programs (transport, energy, tourism)</p> <p>PROCEDURAL: Regional SEE, approvals with regional offices of the Ministry of Construction; cadaster, transport, energy; adoption of regional plans</p>	<p>Regional socio-economic development programs, investment "roadmaps", and pilot projects by international organizations</p>
City	<p>LEGAL: City-level resolutions of khokimiyats, application of national and regional laws; compliance with SNIPs</p> <p>PLANNING: City master plans, detailed territorial plans (DTPs), city sectoral schemes (transport, utilities, landscaping), reconstruction projects</p> <p>PROCEDURAL: Building permits, approval of project documentation with engineering services, and environmental assessments for projects</p>	<p>City development programs ("Renewed Tashkent", "Development of Samarkand as a tourist hub"), mayoral initiatives, pilot international projects, and investment agreements with developers</p>
Local / Micro-district (mahalla, quarters)	<p>LEGAL: Resolutions of district khokimiyats, application of land use and construction laws</p> <p>PLANNING: Detailed plans of quarters, landscaping, zoning, reconstruction programs for mahallas</p> <p>PROCEDURAL: Permits for individual construction, approvals with utility services, and minimal environmental checks</p>	<p>Landscaping programs by Khokimiyat, community initiatives (cleanups, tree planting), social projects via mahalla committees, micro-investment agreements</p>

Let's take a closer look at each group of instruments at all levels in Uzbekistan:

National Level:

I. National-Level Legal Instruments (according to Diller's classification) in Uzbekistan are regulatory acts that provide the legal basis for the entire planning and construction system.

These instruments can be divided into the following types:

Legislation on Urban Planning and Architecture: The Republic of Uzbekistan's fundamental law for architecture, urban planning, and construction activities exists through the Law "On Architectural, Urban Planning, and Construction Activities in the Republic of Uzbekistan" (2002, as amended). The law defines how ministries (State Committee on Architecture and Construction → now the Ministry of Construction and Housing and Public Utilities) and local authorities (khokimiyats) operate. The Urban Planning Code (2021) sets out the legal framework for urban planning activities, which includes planning and development and territory management.

Legislation on Land and Land Use: The Republic of Uzbekistan established the Land Code in 1998, which underwent subsequent amendments to determine land categories and their designated uses and rules for distribution and confiscation, and land usage limitations. The Law "On the Cadaster" controls the upkeep of land cadastral information, which serves as the foundation for planning activities.

Regulations and building standards: Many of these were inherited from the Soviet system but partially adapted. They regulate development density, sanitary standards, protected zones, and technical requirements for buildings and infrastructure. Since the 2010s, these regulations have been gradually updated, but they remain largely prescriptive and offer little orientation toward flexible planning practices.

Special laws related to territorial planning: The Law "On the Protection and Use of Cultural Heritage Sites" (2001) regulates restrictions and regulations in historic city centers (e.g., Samarkand, Bukhara, Khiva). Environmental legislation: the Law "On Nature Protection" (1992), the Law "On Atmospheric Air Protection," and the Water Code all establish the environmental framework for planning.

Presidential Decrees and Resolutions of the Cabinet of Ministers: In Uzbekistan, decrees play a special role. For example, decrees on the integrated development of Tashkent, the creation of new urban centers, industrial zones, or tourism clusters. They have the force of national law and often explicitly set planning parameters.

At the national level, SP instruments in Uzbekistan have arguably retained the greatest concentration of authority compared to other levels of territorial planning.

II. Planning tools at this level include:

General plans are the primary spatial planning tool at the national level, defining the long-term framework for territorial development. In Uzbekistan, such plans are developed for large cities and regions. For example, the General Planning Scheme for Tashkent and the transport network plans approved by the Cabinet of Ministers define the planning framework for the construction of roads and residential areas and coordinate the actions of central government bodies and local governments.

Strategic plans include documents that define the country's long-term spatial development priorities. The Socioeconomic Development Strategy of the Republic of Uzbekistan, along with sectoral strategies for transport development, industrial growth, and tourism expansion, serves as an essential example. The strategies establish how investments should be directed while shaping the growth of transport and energy infrastructure systems.

The development of specific territorial areas receives focus through sector plans, which include functional and sectoral documents for industry, transport, housing, utilities, water resources, and tourism. The development plans for industrial zones, tourism clusters, and water management systems operate as sector plans in Uzbekistan. These plans work in harmony with national strategies and master plans to achieve resource and functional integration across the entire country. (Government of the Republic of Uzbekistan, 2024)

III. Procedural instruments in Uzbekistan include mandatory state project reviews, interdepartmental approvals, as well as approval of master plans, strategies, and sector plans.

1. The Law on Environmental Protection and the Urban Development Code require state reviews to evaluate how development projects affect natural resources and air quality and water bodies, and biodiversity.
2. The national approval process for projects depends on interdepartmental approvals, which help agencies track regulatory compliance and distribute resources and functions between departments. All projects require coordination between various ministries and agencies, including the Ministry of Construction and Housing and Public Utilities, the Ministry of Energy, the Ministry of Transport, the Ministry of Water Resources, and the Ministry of Ecology. (Global Green Growth Institute, 2025)

3. Approval of master plans, strategies, and sector plans.

The General Settlement Plan of Uzbekistan and sectoral programs, such as the transport strategy and energy strategy, must be approved by the Cabinet of Ministers and relevant ministries, which formally enshrines their binding force for subordinate bodies and ensures their legitimacy.

A distinctive feature of the Uzbek model is the high concentration of authority at the national level: procedural instruments appear more centralized and prescriptive. This allows for the rapid implementation of large projects but can also limit the autonomy of regions and local authorities. This can be particularly observed in large initiatives such as the BRI projects, where strategic and planning decisions are made primarily at the presidential and cabinet level, with local authorities merely providing technical implementation. (Ministry of Construction and Housing and Communal Services of the Republic of Uzbekistan, n.d.)

IV. Safeguarding instruments at the national level consists of resource management systems, financial support, and institutional oversight. Key examples include public investment programs, the implementation of transport corridors (e.g., railway projects under the BRI Initiative), energy strategies, and public funds for the development of industrial zones and social housing. The central government (the Cabinet of Ministers and relevant ministries) oversees the implementation of master plans and strategies.

The main drawback of these instruments is that funding decisions are made at the center, which limits the ability of regional and local initiatives to act independently. Transparency, oversight, and monitoring of project implementation may be formal in nature, and a real assessment of performance is limited.

V. Method-based instruments. The national level uses methodological tools via GIS for planning transport and energy corridors, forecasting demographic and economic indicators, and conducting sectoral research (e.g., analyzing agricultural resources and water balances).

However, limitations may also exist here:

Lack of qualified personnel and insufficient data integration between ministries. Limited use of strategic modelling and impact assessment tools.

Informal Instruments

Informal spatial planning instruments in Uzbekistan operate at all levels and represent strategies, initiatives, and practices that are not codified in strict legal norms but have a significant impact on territorial development.

At the national level, these include major modernization programs, strategic documents such as "New Uzbekistan," or the BRI initiatives that set policy guidelines.

At the regional level, informal mechanisms manifest themselves in investment roadmaps, which allow for the flexible adaptation of national priorities to the regional context but can also increase competition for resources between regions. (Uz Daily, 2023)

At the city level, they are expressed in mayoral initiatives for renovation and improvement, partnerships with developers, and pilot projects accelerating urban renewal.

At the micro level (mahallas, neighborhoods), informal instruments are linked to community activity - collective improvement practices and initiatives of mahalla committees. Their value lies in their efficiency, public engagement, and investment attraction, but their limitations lie in the lack of sustainability, systemicity, and transparent coordination. (Government of the Republic of Uzbekistan, n.d.)

A distinctive feature of the Uzbek model is that informal instruments often outpace formal ones: new development directions defined by strategies or initiatives can be implemented before the relevant regulations or detailed plans are in place. This allows for the rapid implementation of large projects, but simultaneously creates uncertainty and a weak system, particularly in terms of assessing environmental and social impacts, which are not directly integrated into the planning process. (Uz Daily, 2023)

Regional Level: Legal Instruments

The legal system at the regional level depends on national laws, but these laws apply differently to each region and district. The national provisions receive additional detail through regional authorities, who create their own legal acts, which include khokimiyats' resolutions and regional councils of people's deputies' decisions. The legal instruments operating at this level connect the national standards to the particular needs of each region.

The development rules of regional urban planning depend on land category, density, and intended land use. The regional and district planning schemes contain these regulations, which serve as legal foundations for all subsequent planning choices. The regional inspectorates

maintain responsibility for monitoring compliance with sanitary, fire safety as well as environmental standards. (Kun.uz, 2024)

However, the normative framework in Uzbekistan exists, but its practical application seems to be inconsistent. The formal establishment of legislative requirements does not always guarantee their effective execution in local areas because of insufficient qualified personnel and inadequate institutional support. The implementation of urban development regulations can face challenges because certain regions choose to support investment projects that violate established rules, which demonstrates how economic interests can override legal frameworks.

Planning Instruments

At the regional level, planning instruments appear to be more practical and detailed. The development of regional territorial planning schemes, district master plans, and local urban development projects serves as the main factor in this process. The documents receive their foundation from national strategies, yet they incorporate adjustments that match the unique features of each territory, including natural elements, resource availability, population trends, and socioeconomic targets.

For example, the national master plan serves as a basis for regional settlement plans to determine industrial zones and residential areas, and infrastructure facilities, yet these plans incorporate local conditions affecting water resources and transportation networks. The regional level implements sectoral plans through active coordination with national programs. The national transport strategy requires international corridor development, but regional documents specify road network details and logistics center sites, and railway station upgrade locations.

Similarly, the energy sector implements national capacity expansion targets through regional projects that build hydroelectric power plants, solar power facilities, and wind energy farms.

However, the regional level differs from the national one in that it is less strategic and more operational. Regional planning instruments do not shape policy but adapt it: they are closer to the ground and depend on the resources available to specific territories. In practice, this leads to imbalances: in some regions, plans are implemented relatively consistently (for example, in the Tashkent region), while in others, they remain declarative due to a lack of funds or weak institutional support.

Procedural Tools

At the regional level, procedural tools include the same tools as at the national level, but are more practical in nature, adapted to the regional level of government. For example,

environmental assessments are conducted by regional environmental agencies and then confirmed at the national level. The same applies to approvals between regional khokimiyats, regional administrations, cadastral guarantees, and sanitary and epidemiological inspectorates.

These approvals can often be bureaucratic, but without them, a project cannot be approved. Likewise, the Ministry of Construction grants final approval to regional city master plans and territorial planning schemes after regional khokimiyat approval. The Ministry of Construction provides the last approval for these projects, but the Cabinet of Ministers must review strategic projects. This means that a region is not completely autonomous: even after all local approvals, a "stamp from above" is required. (Government of the Republic of Uzbekistan, 2023)

As for enforcement and methodological tools, here, too, the same national instruments take on a practical regional character.

City Level:

At the city level, legal instruments such as are virtually nonexistent, as all key norms and laws are derived from national legislation and building codes. Khokimiyats and city architectural departments merely implement them in practice and ensure compliance with established rules and land use decisions. (Tashkent Times, 2024)

The primary planning instruments here remain master plans, detailed territorial plans, and sectoral schemes.

Procedural mechanisms are of a day-to-day nature and include construction permits, environmental assessments at the site level, approvals from utility companies, and public hearings, which occur more on paper than in practice.

Safeguarding instruments at this level include funding for municipal projects, monitoring the implementation of master plans, and resource management for the development of utility and transport infrastructure at the city level.

Method-based instruments, in turn, rely on analytical and digital methods: the use of geographic information systems for zoning and transport modeling, population density analysis, and forecasting urban development needs.

As a result, at the city level, formal instruments are as close as possible to everyday practice and directly regulate what can be built and where. The approval procedures, assessment protocols, and permitting processes operate as standardized administrative procedures. The city authorities seem to maintain limited autonomy because essential choices originate from higher levels, while they lack the freedom to determine their own development objectives. At the same

time, informal instruments are particularly important, as mayors' political initiatives, investment agreements, and various roadmaps often determine the pace and direction of city development much more quickly and effectively than official plans and regulations.

Local level:

Planning tools at this level are highly practical. The primary tool is detailed territorial plans at the block level, which determine the placement of residential buildings, social facilities, courtyards, and green. The city implements improvement programs that include street maintenance, lighting setup, parking lot development, and courtyard beautification. The Mahalla reconstruction program stands apart from other projects because it involves the destruction of entire neighborhoods to build new high-rise buildings.

Procedural mechanisms include issuing permits for individual construction, connecting to utility networks, and coordinating with utility services.

Safeguarding tools at the local level include funding for improvement projects, monitoring the implementation of detailed territorial plans, and resource management to support new development on the ground.

Method-based tools are implemented using GIS technologies for zoning and modeling street and road networks, analyzing population density at the micro district level, and forecasting the need for schools, kindergartens, and social infrastructure.

Informal instruments are particularly prominent at this level, as they directly shape the quality of the everyday environment. These include beautification programs launched by khokimiyats (local governments) ("Renewed Mahallas"), resident initiatives such as cleanup days, collective repairs, and landscaping, as well as social projects through mahalla committees: fairs, cultural events, and assistance to low-income families. Investment agreements at the micro level also play a significant role when developers negotiate with residents to demolish private homes and subsequently provide housing in new apartment buildings. (Zamin.uz, 2025)

As a result, at the local level, legal and procedural instruments become tools of "daily administration" and primarily concern permits, connections, and approvals. Planning documents are extremely detailed, down to the location of courtyards or playgrounds, while informal initiatives by residents and khokimiyats often have a decisive influence on the actual quality of the urban environment. At the same time, the autonomy of this level is also limited: even here, key decisions regarding reconstruction or development are made from above, with local authorities and residents more often acting as implementers or adaptors of the general framework.

An analysis of modern spatial planning instruments in Uzbekistan shows that the national level may concentrate primary authority and resources, ensuring the development of master plans, strategies, and sectoral plans, while the regional, city, and local levels primarily implement these decisions and adapt them to specific conditions.

Moreover, the combination of official legal documents and planning tools with local community practices occurs mainly at the city and micro levels because local government programs and community projects move faster than official plans. Distinctive features of the Uzbek model can include high centralization, underdeveloped procedural and methodological mechanisms, limited public participation, and a gap between the formal structure of instruments and their practical application, which possibly create the need for greater consistency, flexibility, and monitoring at all levels of spatial planning.

4.4. Discourse and Challenges of Spatial Planning in Uzbekistan.

Spatial planning in Uzbekistan has been shaped by historical, political, and economic factors. Over the course of the 20th and 21st centuries, approaches to territorial organization have evolved in line with the historical context, state interests and priorities, and external influences. Within this context, different historical periods, with their own approaches to planning, have shaped specific "discourses"- stable combinations of values, institutions, methods, and practices that defined the goals and strategies of territorial development.

In this chapter, the study proposes to examine the main current discourses in Uzbekistan, study the reasons for their emergence, and try to analyze how these discourses have influenced and continue to influence the modern appearance of spatial planning in Uzbekistan.

Since the origins of spatial planning in Uzbekistan only began to emerge under the Soviet government, this research will begin with this period. This is because of the enormous influence of the Soviet legacy, which guided the development of all sectors of the state for nearly seventy years, and cannot be denied.

Thus, during the existence of the Uzbek Soviet Socialist Republic (SSR), one of the fundamental discourses that continues to influence today: the Soviet institutional discourse (the legacy of the planned system).

Let's examine it in more detail.

Soviet institutional discourse

The Soviet institutional discourse on spatial planning in Uzbekistan developed as part of the overall planning system of the Union of Soviet Socialist Republics (USSR) and represents a legacy of centralized territorial governance. This approach was based on a rigid vertical power structure, where decisions on urban development and transport infrastructure were made at the state level and transmitted top-down through a series of institutional structures.

The main characteristic of Soviet discourse was a technocratic vision of territorial development, in which space was viewed primarily as an object of rational organization. Planners focused on functional efficiency, optimization of transport and utility networks, development density, and the distribution of industrial and residential zones, while social and cultural aspects often remained secondary. This approach ensured systematic and predictable development, but simultaneously limited flexibility and the ability to adapt to local conditions or innovative planning methods. (Stronski, P,2010)

The legacy of Soviet discourse continues to influence contemporary spatial planning in Uzbekistan. The current Urban Development Code and standard norms (SNIP) demonstrate their presence through their centralized design approach and standardized solutions. The Soviet-era bureaucratic system maintains its hold on the system, which can prevent the adoption of modern design methods and creative solutions. (Urban Planning Code of the Republic of Uzbekistan, 2021)

Thus, the Soviet institutional discourse serves as the base structure that supports the current spatial management system of Uzbekistan. It defines the institutional framework, design practices, and ways of thinking about territory, shaping both opportunities and challenges for the transition to more flexible, integrated, and sustainable approaches to planning.

The problems and challenges of this approach include a strong institutional hierarchy, which manifests itself in dependence on directives and a lack of flexibility at the city and regional levels. Bureaucratic inertia is also a significant challenge. Administrative and regulatory mechanisms created during the Soviet era continue to shape modern urban planning processes. Even with new strategies and programs, innovations encounter outdated norms, procedural complexity, and resistance within the system. This slows the adaptation of spatial planning to modern international standards and reduces the effectiveness of territorial governance. (Allayarov, n.d.)

After the collapse of the USSR, a new stage in Uzbekistan's development as an independent state began, and with it, a new discourse began to emerge—the Discourse of Independence and Nation Building (1990s–2010s).

Discourse of independence and national identity (1990s–2010s)

The new state established after independence in the early 1990s led to changes in national interests and strengthened national identity, which influenced spatial planning to adopt fresh approaches and objectives.

In that period, Uzbekistan worked to break free from Soviet control by restoring its national heritage and creating independent development paths after gaining independence in the early 1990s. (Karimov, 1992)

In this context, the new functions of spatial planning emerged during this time because it served both physical space organization and as a tool to show independence, support to the new government, and build a modern state image with national identity. (Karimov, 1992)

Figure 10. Samarkand city, Registan Square

Source: Open-access images from the Internet.



Central to this discourse was the development of the capital and major cities of the country. The modernization of the urban environment, the construction of monumental buildings and squares, and the reconstruction of national heritage sites were aimed at creating a visual image of the newly independent country with its own deep national heritage. (Karimov, 1996)

This discourse in spatial planning continues to function today and has become an integral part of the territorial development strategy in Uzbekistan. A distinctive feature of this discourse, as already mentioned, is the approach of combining modern urbanism with the representation of national identity.

The approach demonstrates itself through efforts to protect historical heritage while incorporating traditional architectural elements into contemporary structures and building a contemporary Uzbekistan image that unites cultural roots with contemporary advancement.

The official discourse appears in strategic plans and documents through repeated references to cultural heritage terminology, historical identity, urban image creation, and architectural integration. (Karimov, 1996)

These formulations are found in projects for the renovation of historical city centers, tourist-significant areas, and in strategies for the integrated development of urbanized territories, such as the master plans of Tashkent and Samarkand, as well as in documents of the Ministry of Culture and the Investment Agency.

Interviews with TashkentboshplanLITI staff confirm that in the implementation of these projects, attention is paid not only to economic efficiency, but also to the visual and cultural integrity of the urban environment. One of the experts notes: "When designing the renovated central districts of Tashkent, we try to integrate elements of national architecture — ornaments, facade solutions, traditional materials — to preserve the visual identity, but at the same time not to slow down the development of transport and social infrastructure."

Figure 11.Tashkent city.

Source: Open-access images from the Internet.



In addition, the experts indicate that economic optimization targets frequently create obstacles for cultural heritage protection. The reconstruction of Samarkand's historical quarters demanded moving some present-day residential and commercial buildings, which triggered social disagreements. The main disadvantage of this method stems from its tendency to prioritize representative and architecturally important projects while ignoring sustainable resource management and socially responsible development, and environmental sustainability. The method operates against the principles of strategic planning by creating unconnected projects.

Discourse of international cooperation and donor programs

International cooperation discourse started to appear in Uzbekistan's spatial planning in the early 2000s through donor organizations and global development institution activities. The country joined international economic and environmental programs, which led to this discourse, while also requiring adaptation to sustainable development, green growth, resilience, inclusiveness, and good governance principles. The discussion presented alternative values and methods that focused on complete territorial development by using environmentally friendly and transparent practices. (Dadabaev, 2016)

Projects from the World Bank, the Asian Development Bank, UN-Habitat, the Global Environment Facility, and several regional initiatives (CAEU, SCO) played a key role in its formation. The programs included pilot initiatives for energy efficiency, sustainable water, land management, smart city development, transport infrastructure modernization, and climate change adaptation. The projects operated independently from national planning systems because they operated as local experimental initiatives. The programs enabled Uzbekistan to adopt modern spatial management concepts and practices, which entered the country through these initiatives. (Eurasian Research Institute, 2016)

The discourse seems to present an indirect approach to international standard implementation because Uzbekistan receives these standards through grants, advisory missions, and pilot projects. The implementation of international practices in Uzbekistan usually happens separately from national planning traditions because these practices receive targeted implementation instead of strategic and comprehensive execution.

The Strategy for Uzbekistan's Transition to a Green Economy for 2019–2030 serves as an example of strategic documents that include sustainable development and climate adaptation principles through UNDP, World Bank, and GEF collaboration. The Smart City Concept received international IT company and Asian Development Bank backing for its pilot projects, while the National Climate Change Strategy received support from UNDP and GEF for its development.

The Action Strategy for Five Priority Development Areas of the Republic of Uzbekistan for 2017–2021 includes provisions about sustainable development and smart city development, and international investment attraction, but these initiatives lack proper integration into institutional structures and regulatory frameworks. (Action Strategy for Five Priority Development Areas of Uzbekistan, 2017–2021)

The European tradition of spatial planning through the European Spatial Development Perspective (ESDP) and territorial cohesion policy shares similarities with this discourse, yet

Uzbekistan views these elements as separate components instead of a unified strategy. (Eurasian Research Institute, 2016)

The main difficulty with this discourse stems from its weak institutional framework. The national planning system seems to lack mechanisms to sustain international practices beyond donor project completion periods. The adoption of international concepts without proper adaptation to local needs creates a risk that reduces their practical application effectiveness.

Thus, the international cooperation and donor programs in Uzbekistan create a special "window of opportunity" which enables the country to adopt global standards and innovative planning methods.

Contemporary discourse on economic growth and global integration

The spatial planning of Uzbekistan has directed its efforts toward economic modernization and global market integration since Shavkat Mirziyoyev started his reforms in late 2019. The period has established economic expansion through infrastructure development and investment as its main objective. (Action Strategy for Five Priority Development Areas of Uzbekistan, 2017–2021), (Silk Road Studies Program, 2018)

This approach places emphasis on macroeconomic planning: cities and regions are perceived as nodes and corridors that should ensure maximum efficiency of economic processes, transport logistics, and industrial growth. The main goal is to create conditions for increasing national GDP and integration into international economic initiatives, including projects within the BRI. (Action Strategy for Five Priority Development Areas of Uzbekistan, 2017–2021)

New spatial development nodes should become magnets for capital and technology. This is reflected in the construction of industrial zones (Angren and Jizzakh industrial zones), free economic territories (Navoi, Angren, and Jizzakh FEZs), new cities (the New Tashkent project), and logistics hubs, as well as the modernization of transport and engineering infrastructure. Particular attention is being paid to the country's transit potential—turning Uzbekistan into a link between East and West, which is related to China's BRI Initiative.

Action Strategy for Five Priority Development Areas of Uzbekistan, 2017–2021 (the BRI Portal, 2021)

The National Strategy for the Development of the Transport System (2020) extensively uses the terms "infrastructure corridors" and "logistics hubs". It states that the development of key transport routes, such as railways and highways between industrial centers and export ports,

should ensure "effective integration of regions into the national and international economic network". (Institute for Strategic and Regional Studies, 2020)

The Navoi Free Economic Zone and other development programs for special economic zones employ "investment zones" as their official terminology. The documents state that these zones function to concentrate production and service assets within designated areas, which results in better resource utilization and faster economic expansion. (Silk Road Studies Program, 2018)

The BRI initiative has established a framework for this discussion by enabling Uzbekistan to participate in international transport corridor development, railway construction, logistics, and infrastructure enhancement projects. The projects align with global integration principles because they enhance national economic power, establish connections to international trade networks, investment opportunities, and communication systems, which promote faster economic growth (BRI Portal, 2021)

The interview respondents also confirmed that the terminology used in strategic plans is not formal but is actively used in planning. The formulations "investment zones", "infrastructure corridors", and "logistics hubs" regularly appear in documentation and presentations for ministries and investors. As the experts noted, when creating a regional plan, each site is assessed from the point of view of what economic effect it will bring and how it integrates into the national transport and industrial network.

However, potential economic growth opportunities can often be associated with the risk of debt dependence and reliance on external investors and international initiatives, where a country's long-term strategic interests may take a backseat to short-term gains.

As economic specialists note during the interview, the BRI projects provide significant economic opportunities but create dependence on external investors whose priorities do not always coincide with national spatial planning. The specialist explains that the need for infrastructure projects to meet foreign partner requirements can frequently lead to changes in their implementation schedule and development plans for the region.

Furthermore, the pursuit of fast development and capital attraction can create obstacles for achieving both environmental sustainability and social equity. For example, Industrial zones and new cities sometimes can require substantial natural resource usage as well as create major infrastructure challenges while potentially generating social disparities.

Table 6. Spatial planning discourse description

Source: Author's own elaboration

Discourse	Key Characteristics	Focus / Priorities	Examples / Manifestations
Soviet Institutional	Centralized governance, rigid hierarchy, and a technocratic approach	Functional efficiency, standardization	Urban Development Code, SNIPs, and bureaucratic inertia
Independence and Nation-Building (1990s–2010s)	Symbolic modernization, national identity	Legitimization of authority, visualization of the state	Monumental buildings, avenues, and the renovation of historic city centers
International Cooperation and Donor Programs	Sustainable development, green growth, inclusiveness, and good governance	Pilot projects, introduction of European practices	Smart cities, energy efficiency projects, grants from WB, ADB, UN-Habitat
Economic Growth and Global Integration (since the late 2010s)	Investment, infrastructure, logistics, tourism, and global integration	Economic competitiveness, new nodes and corridors	Industrial zones, new cities, free economic zones, logistics hubs, BRI projects

Thus, the development of spatial planning in Uzbekistan has resulted from multiple discourses, which include Soviet institutionalism, nation-building, donor-driven sustainability, and growth-oriented globalization. The different planning approaches demonstrate changing national goals and foreign impacts. Yet, their simultaneous operation produces conflicts between economic expansion and environmental protection, between domestic cultural values and foreign development models, and between official projects and social fairness. The planning process today exists as a hybrid system that combines Soviet heritage with international best practices, while modernization efforts create both positive prospects and institutional barriers.

Practical Challenges and Institutional Barriers

The implementation of spatial planning in Uzbekistan faces multiple barriers according to expert interviews, which directly stem from the analyzed discourses. The Soviet model's vertical governance system with sectoral logic continues to persist as the main obstacle that hinders interdepartmental coordination and produces rigid technocratic planning approaches. The lack of coordination between different planning levels creates a major challenge because national, regional, and local strategies develop independently, which results in duplicated efforts and prolonged implementation times.

The process of digital transformation seems to face two major challenges because of low digitalization levels and insufficient spatial database capabilities, which can make it difficult to

perform risk assessments and make decisions. The public and business sectors can face challenges because they do not actively participate in decision-making processes, which results in low public trust toward government institutions and their projects. Moreover, the current personnel shortage creates additional challenges.

Furthermore, the BRI Initiative hypothetically led to rising dependence on foreign entities and their projects for Chinese economic development. The access to investment and infrastructure projects through these initiatives may pose a threat to national priorities because external interests may partially control them.

Chapter 5: The Impact of the BRI on Spatial Planning in Uzbekistan

5.1 The Mutual Influence of the BRI and Uzbekistan

I) Impact of the BRI on Uzbekistan

The theoretical part of the work examines the evolution of the concept of spatial planning - from a "conformative" model to a "neo-performative" one, in the context of multi-level governance and external influence. Within the framework of the limited sovereignty paradigm (Agnew, Lange, Kyris, etc.), it is considered that modern spatial planning is an instrument subject to transnational pressure, especially in developing countries. (Agnew, 2005), (Lange, 2023),

In this context, Uzbekistan is becoming an excellent example of a hybrid model: on the one hand, it maintains a high level of state control (centralized power), but on the other hand, it is increasingly integrating international projects, especially through participation in the BRI initiative. This statement is confirmed by the opinion of an expert from the Institute for Strategic and Regional Studies under the President of Uzbekistan (ISMS), which he shared during an interview conducted specifically for this study.

Within the framework of this hybrid model, several aspects of the influence of the BRI on spatial planning and management in Uzbekistan can be identified.

One of the first aspects is the institutional redesign under the influence of the BRI:

Agnew's (2005) theory of "regimes of sovereignty" argues that sovereignty is not an absolute category, but a regime of distributed power in which the state cedes authority to external actors. In the case of Uzbekistan, participation in the BRI projects – especially transport corridors, Special Economic Zones (SEZs) and logistics hubs – means a de facto redistribution of spatial control, as Chinese companies (for example, China Construction Fifth Engineering and BSM Group) are increasingly involved in the development of clusters and industrial zones in Uzbekistan. At the same time, Uzbekistan formally retains legal control, but strategic zoning and territorial planning are increasingly oriented towards the interests of the external investor. (Yazdani, 2020)

We are thus witnessing a shift from traditional territorial sovereignty to 'situational' sovereignty (Lange, 2023), where decisions are made depending on the terms of contracts and obligations to the investor.

A theoretical perspective that views planning as an ‘institutional technology’ (Janin Rivolin, 2008) allows for a deeper understanding of how external mechanisms – in this case, China’s BRI Initiative – shape the conditions, frameworks, and directions of domestic policies and urban practices.

The case of Uzbekistan appears to demonstrate that interaction with the BRI entails not just an influx of infrastructure investment, but also a change in the very nature of spatial governance. Even though Uzbekistan retains control over its territory and institutional architecture, participation in the BRI projects – such as the China-Kyrgyzstan-Uzbekistan railway corridor, the creation of free economic zones in Navoi and Jizzakh, the development of transport and logistics hubs and industrial clusters – leads to a redistribution of powers in the sphere of spatial regulation. (China–Kyrgyzstan–Uzbekistan Railway, 2025)

This is evident in the fact that decisions on the placement of key infrastructure facilities are increasingly being made not only based on the internal logic of socio-economic development but also considering the interests of Chinese investors and the regional transit strategy broadcast through the BRI. As a respondent from the ISMS interview noted, when implementing these projects, many processes are accelerated, and some procedures (for example, environmental assessment) are conducted formally. National interests are considered in matters of routing and employment: the participation of local workers and production is mandatory. But the balance between the speed of implementation and the quality of regulation remains a challenge. (China, the briefing, 2024)

At the same time, Uzbekistan cannot be viewed as a dependent or passive entity. The policy implemented by the Shavkat Mirziyoyev administration since 2016 appears to demonstrate a desire not only to integrate into global initiatives but also to use them as a resource for domestic reforms. The Uzbekistan 2030 strategy includes the modernization of logistics, transport, and industrial zones, which coincides with the goals of the BRI, but these coincidences are not subordinate, but rather a reflection of coinciding interests. Uzbekistan is actively involved in negotiations on routes and conditions for implementing projects, in some cases adapting Chinese proposals to national priorities, as seen, for example, in the issue of routing the Chinese Kyrgyz Uzbek railway. (Amighini, 2017)

The "New Tashkent" project also warrants attention. Although it is not officially framed as part of the BRI Initiative (the BRI), its rhetoric, scale, and infrastructural logic exhibit notable parallels with Chinese models of urban development, such as the Xiong'an New Area. While the project is primarily domestically financed, the involvement of Chinese contractors in building energy and transportation infrastructure underscores the ways in which external influences can permeate

even ostensibly “nationally initiated” programs. This raises a critical question regarding the boundaries of agency: to what extent domestically led projects can be considered autonomous from global logics of capital investment and infrastructural design. (Tekir, 2015)

The analysis shows that spatial planning in Uzbekistan, in the context of participation in the BRI, is acquiring features of hybrid governance: it retains central coordination and formal institutions but is increasingly involved in processes that require coordination with transnational interests. This leads to the fact that spatial development strategies are concentrated around export-oriented clusters, logistics corridors, and technology parks, while social and environmental aspects (e.g., sustainable housing, green infrastructure) are either subordinated to these goals or remain secondary.

In the context of intensified interaction with Chinese state and private structures, Uzbekistan needs to develop institutional mechanisms capable of ensuring efficiency, flexibility, and predictability in the implementation of large transnational projects. Thus, accelerated registration of Chinese enterprises in free economic zones (for example, in Navoi, Jizzakh, and Urgut), simplified procedures for the allocation of land plots, and access to infrastructure - all this requires significant adaptation of national procedures for managing space.

A new institutional reality is emerging, in which the classical stages of design and regulation (such as public discussions, environmental assessments, and urban development assessments) are either accelerated or recede into the background in front of the logic of attracting investment and fulfilling obligations to external partners.

In parallel with this, there is a shift in the priorities of spatial planning itself. If previously the planning agenda focused on the tasks of internal balance between social, housing, and infrastructure needs, now the vector is reoriented towards the creation of industrial clusters, logistics hubs, and infrastructure corridors. (Amighini, 2017)

In this context, the Chinese model of infrastructure development is beginning to serve as a kind of benchmark. The involvement of Chinese contractors and consultants in the design of technology parks, transport hubs, and industrial zones leads to the transfer of not only technologies, but also organizational culture: hierarchy, accelerated construction, focus on large volumes, and strict implementation schedules. Spatial planning in Uzbekistan is thus beginning to reproduce the logic in which cities are viewed as nodes of a transit economy serving not only domestic demand, but also international flows – primarily between China and the Middle East, Europe, and South Asia. (Amighini, 2017)

All these processes confirm the initial hypotheses of the dissertation.

Firstly, the BRI does have a transformative effect on the institutional structure of spatial governance in Uzbekistan, requiring it to be more flexible and adaptive (hypothesis 1). Secondly, there is a clear revision of national priorities in favor of those areas that are associated with the logic of global infrastructural connectivity, to the detriment of, or at least in the shadow of, socially oriented goals (hypothesis 3). All this indicates that planning can no longer be considered a closed function of the national state: it is becoming an arena of cross-pressure between internal development tasks and external logics of economic and political influence.

Thus, it is possible to identify the main manifestations of the aspect of institutional redesign under the influence of the BRI - these are (1) adaptation of legislative procedures to the standards of Chinese contractors (for example, accelerated allocation of land in the SEZ); (2) transformation of priorities of spatial planning: from social infrastructure to industrial and logistics projects; and (3) integration into Chinese models of infrastructure development, which forms a new spatial logic, adapting cities to the role of "nodes" of transit. (Rolland, 2017)

The following aspect of the influence of the BRI on the spatial planning of Uzbekistan:

Spatial-hierarchical transformation and uneven development

Uzbekistan's participation in the BRI Initiative (the BRI) entails not only institutional transformations in the spatial management system, but also a redistribution of territorial priorities towards the logic of nodal connectivity and hierarchization of regions. This is expressed in the increasing shift of resources, investment, and management focuses on territories with a strategic position in international corridors, while simultaneously marginalizing spaces not included in the BRI architecture. (Amighini, 2017)

Such dynamics confirm the hypothesis that spatial planning in the context of a globalized infrastructure regime ceases to be a neutral technocratic function of resource allocation and becomes an expression of a network of political and economic preferences that integrate individual Uzbek cities and regions into transcontinental value chains. Against this background, a clear hierarchization of spaces is taking place, where, for example, Tashkent, Navoi, Samarkand, or Andijan become priority points of investment and institutional intervention, both due to their geographical location and the availability of infrastructure platforms suitable for integration into transnational flows. (World Bank, 2018)

The spatial effects of the BRI are manifested in the expansion and deepening of the functions of key cities, such as Navoi, where the FEZ is turning into a central industrial and logistics hub, or Samarkand, where Chinese partners have initiated the creation of a high-tech cluster. These territories obtain Chinese funding as well as state-of-the-art technology, fast-track regulatory

processes, and political backing. At the same time, the other regions, especially those located remotely from corridors, such as Karakalpakstan, Surkhandarya, and Kashkadarya, may remain outside this focus and can face structural exclusion from regional development. (China, the briefing, 2024), (Rolland, 2017)

This spatial logic can create internal inequalities because external capital and logistics access determine success in space rather than promoting balanced development through local demographic and cultural, and environmental factors. Thus, under the influence of the BRI, a scenario of point modernization growth is being implemented in Uzbekistan, in which investment efforts are concentrated in a limited number of territorial “poles”, while peripheral spaces are increasingly dependent on the redistribution decisions of the center and are losing the ability to develop autonomously.

This development vector reflects not only economic but also institutional consequences: local authorities in “nodal” regions receive priority access to resources, project support, and political attention, while the periphery is deprived of full subjectivity in managing its space. As a result, a vertical spatial hierarchy is strengthened, where the main centers of development are determined not by internal strategies, but by global logics of infrastructural connectivity oriented towards Chinese investment flows.

It should be emphasized that such a transformation is not neutral: it carries long-term risks of institutional inequality, economic fragmentation, and social tension. Against the background of the development of hub cities, migration pressure increases, and the contrast between the standard of living and access to infrastructure increases, which requires additional corrective policies from the state. However, in the current version of the spatial policy of Uzbekistan, such compensation mechanisms remain insufficiently institutionalized, and the logic of balanced territorial development is often subordinated to the priorities of global logistics.

Thus, the BRI reproduces in Uzbekistan not only a new infrastructural geography but also a new spatial-hierarchical structure, where regions and cities are ranked according to the degree of their involvement in transnational flows. Spatial planning does not perform a distributive, but a selective function - strengthening and consolidating hierarchies formed outside the national planning discourse but actively implanted in its structure through transnational projects and actors.

Transformation of decision-making mechanisms and weakening of public planning

One of the less obvious but conceptually significant consequences of Uzbekistan's involvement in the BRI Initiative is the transformation of decision-making mechanisms in the field of spatial planning. In the context of the need to quickly implement transnational infrastructure projects associated with tight schedules, large contracts, and significant political and economic commitments, the logic of accelerating administrative procedures and concentrating powers within a narrow circle of actors comes to the fore.

This, in turn, leads to a weakening of the publicity and transparency of planning processes, as well as to a partial devaluation of horizontal coordination mechanisms, including the participation of civil society, professional communities, and local governments.

If we consider planning as an “institutional technology” (Janin Rivolin, 2008), it is important to note that in its classical–normative configuration, it includes not only the development of territorial documents, but also a ramified system of procedures: public hearings, interdepartmental approvals, environmental and urban planning expertise, preliminary strategic modeling, etc. However, in the context of the implementation of the BRI projects, most of these procedures are either significantly accelerated or replaced by administrative mechanisms of direct approval “from above” – at the government level or through intergovernmental agreements.

For example, the construction of industrial zones and logistics hubs with the participation of Chinese companies in the Navoi, Jizzakh, and Samarkand regions is often accompanied by the allocation of land plots under an accelerated procedure, without a full discussion at the level of the mahalla or local khokimiyats. Contracting organizations often gain access to sites before all stages of environmental impact assessment (EIA) are completed, and citizens either do not receive information about the upcoming construction or learn about it after the fact. This leads to a conflict between the logic of the investment contract and the logic of public control, in which the latter is significantly weakened. (ResearchGate, 2025)

Moreover, the priority of external efficiency and contractual obligation over internal coherence and social legitimacy leads to the technocratization of planning, where the “plan” loses its character as an open process of coordinating interests and turns into an instrument for the direct operational implementation of the investment agenda. This is especially noticeable in cases where the development of design documentation or urban planning solutions is carried out by foreign contractors - architectural and engineering firms from China, for whom the local context becomes secondary concerning the universal implementation model. (ResearchGate, 2025)

The early development stage of urban development decentralization in Uzbekistan possibly makes this situation more complex. The BRI faces increasing external pressure while Uzbekistan's management decisions appear to become more centralized because presidential administration approval controls major projects and central ministries handle implementation responsibilities, but local authorities may maintain only ceremonial roles.

The management structure develops a dual vertical system that unites national and transnational interests through decreased local responsibility. The formal participation of the local community in decision-making was also mentioned by several interview respondents, which formed the basis of this statement. (Vakulchuk & Overland, 2019)

This shift in spatial planning decision-making mechanisms can be interpreted as a manifestation of structural pressures from the global investment regime to which the BRI directly belongs. In contrast to the formalized norms of participation and transparency characteristic of European planning practices (e.g., within the EU's territorial cohesion), the Chinese model is focused on efficiency, scale, and speed, making it difficult to reconcile with a procedural culture based on inclusiveness.

The influence of this model in Uzbekistan leads to the formation of a hybrid planning regime, in which the external façade of regulatory procedures (Master Plans, territorial development schemes, FEZs, and transport hubs) is preserved, but the real decision-making process is increasingly carried out within the framework of direct administrative acts approved for a specific investor. This does not mean the complete abolition of publicity, but it shows its narrowing and that a significant part of spatial policy is closed to external discussion. (Rolland, 2017)

Thus, participation in the BRI initiative entails not only institutional transformations but also a change in the procedural landscape of planning in Uzbekistan. This change is manifested in the transition from planning as a mechanism of "open coordination" to planning as an instrument for the operational provision of transnational infrastructure solutions, which, in turn, calls into question the long-term sustainability and legitimacy of territorial strategies implemented in such conditions.

Economic and ecological contradictions and dilemmas of sustainable development

Uzbekistan's involvement in the BRI Initiative, despite its obvious value in terms of accelerated economic growth and infrastructure renewal, simultaneously gives rise to contradictions related to sustainable development and natural resource management.

The spatial logic of the BRI is primarily focused on ensuring transit and production connectivity, which entails accelerated development of territories, increased pressure on the environment, and a change in the model of spatial behavior of the state towards technocratic mobilization of resources - land, water, energy, transport infrastructure - with a priority on economic efficiency.

In these conditions, the question arises about the ability of the national spatial planning system to ensure a balance between investment attractiveness and environmental sustainability. (Kyris, 2018)

According to critical approaches to sustainable development planning (Davoudi, 2009; Campbell, 1996), any spatial strategy aimed at growth should include a mechanism of "ecological counterbalance" – tools that allow integrating long-term environmental consequences into the decision-making process. However, the implementation of the BRI projects in Uzbekistan – from the construction of industrial parks to the expansion of logistics corridors – is often accompanied by the minimization of environmental assessments, especially in rapidly developing FEZs such as Navoi, Jizzakh, and Urgut.

Land plots for development are allocated on an expedited basis, while preliminary environmental impact assessment (EIA) procedures are either formalized or relegated to the background. This creates a situation of institutional conflict between environmental and investment regulatory regimes, in which the latter takes precedence. The formality of environmental assessments is also mentioned by the interviewee, an expert from the ISMS, and an expert from the State Committee on Ecology in Uzbekistan explains that they are often carried out at a later stage, when it is no longer possible to make adjustments. (Rolland, 2017)

The situation can become more challenging because Uzbekistan can face both geographical risks and unstable climate patterns. The country faces severe water scarcity while its land undergoes desertification and soil deterioration, and experiences rising temperatures. The construction of the BRI transport infrastructure, heavy industry, and energy facilities in the steppe and semi-desert, including the Navoi and Bukhara regions, puts additional strain on the already vulnerable natural ecosystems. As the interviewee, an expert from the State Committee on Ecology, adds, when planning transport corridors, the load on water resources, soils, and

biodiversity is often not considered quantitatively, which causes environmental risks. (Imomnazar, 2018)

At the same time, the environmental component of spatial planning is often not integrated into the systemic structure of decision-making but is presented fragmentarily - through commitments within national strategies or international declarations that lack sufficient implementation tools. "Formal environmental hearings exist, but their results often remain on paper and are not implemented in practice since it is not beneficial to anyone in an economic sense," noted an Ecological expert from the State Committee of Ecology in the interview.

The problem is compounded by the fact that environmental parameters in the BRI projects are generally not subject to inter-party negotiation on equal terms. Unlike agreements with European or international financial institutions, where climate standard requirements are built into the financing system, Chinese investments are focused primarily on the functional indicators of the project – speed, volume, profitability – with minimal intervention in environmental safety and social sustainability. Uzbekistan thus finds itself in a position where it must independently ensure the integration of environmental considerations into the implementation of projects designed and managed within a transnational logic. (Imomnazar, 2018)

However, we cannot talk about absolute disregard for environmental issues. For example, as an environmental expert said in an interview, during the reconstruction of the Tashkent-Samarkand railway, according to the standards of Chinese investors, wastewater treatment systems and technologies for minimizing noise impact on populated areas were installed. And during the construction of the railway through the mountainous and forested areas of the Jizzakh and Fergana regions, compensatory planting of forests, construction of engineering protective structures, and water drainage systems were carried out. Although on a large scale, there are still minor actions. (UzDSMI-NF, 2025)

The result is that environmental sustainability remains on the periphery of planning consciousness, despite the proclaimed goals of the Uzbekistan 2030 Strategy, and the climate agenda – for example, the transition to renewable energy sources, water-saving technologies, and the preservation of green belts – is implemented mainly in parallel channels that do not intersect with the BRI infrastructure solutions. This creates a fragmented institutional architecture, where sustainability goals and economic growth goals exist in isolation from each other, and integration mechanisms remain poorly developed. (UzDSMI-NF, 2025)

Thus, the economic and environmental dimension of the BRI in Uzbekistan demonstrates the internal contradictions of the spatial development strategy, in which the logic of global efficiency

dominates, but a fully verifiable logic of sustainability is absent. This poses a key challenge for Uzbekistan: either to integrate environmental responsibility into the framework of its agency when interacting with transnational initiatives, or to risk the formation of spatial development that is unsustainable in the long term, both in the social and in the natural resource dimension.

II. Uzbekistan Influence on the BRI

If the previous section examined the processes of Uzbekistan's adaptation to the transnational BRI initiative, in this case, it is important to show the reverse dynamics - how exactly Uzbekistan, possessing a certain geopolitical, institutional, and regional subjectivity, influences the nature, content, and trajectory of the initiative itself.

Within the framework of this relationship, several directions can be identified in which Uzbekistan influences the BRI initiative in the regional and institutional context.

1. Promoting a moderate, multi-vector policy

Uzbekistan has worked to establish foreign economic and foreign policy relations through open multi-directional approaches during the last few years. (Government of the Republic of Uzbekistan, 2025.) The nation started to shift from its isolated stance after political leaders took power in 2016 by implementing a strategy of practical diplomatic relations and broadening its relations with foreign nations. (Zarate, 2018). The World Bank (2018) views this openness policy as a component of modernization efforts and economic transformation initiatives. (World Bank, 2019).

Uzbekistan works to establish diplomatic relations with major centers of power, which include China and Russia and the European Union and Turkey and India, and the United States. (Central Asia Program, 2018). This strategy can enable countries to spread their foreign economic ties while minimizing risks from depending on a single market.

Uzbekistan's joining the BRI does not mean the country must follow Chinese political rules or become politically controlled by China. The BRI projects operate under national plans, which include Uzbekistan 2030, and work together with European Union programs and Turkic Council initiatives, and United Nations projects. (Government of the Republic of Uzbekistan, 2023).

This approach aims to create a balanced multi-vector model that enables Uzbekistan to work with multiple international power centers while preserving its ability to make independent choices. The model supports open cooperation and national interest protection through its participatory framework.

Such a position would enable the BRI initiative development in Central Asia through institutional growth, which would create a more coordinated multipolar framework. Through its position, Uzbekistan could connect nations in Central Asia who follow different foreign policies to create better economic relations and decrease regional tensions.

Thus, the multi-vector strategy functions as the conceptual basis for Uzbekistan to join the BRI through a framework that enables national goals to match external development tools. The method will improve the initiative's institutional stability and its ability to adjust to local requirements.

2. Uzbekistan's role in the BRI transport infrastructure

Uzbekistan demonstrates its geostrategic involvement with the BRI through transportation corridor development and infrastructure construction, which positions the country as both a transit center and an active player in determining its position. The Uzbek government established plans to build transportation and logistics systems and transit potential through 2030 by creating alternative transport corridors, including "Uzbekistan-Kyrgyzstan-China" and "Uzbekistan-Afghanistan-Pakistan," to boost its logistical value. (Uz daily, 2023)

Furthermore, official reports indicate Uzbekistan's links to international transport routes through its ongoing land transportation development and multimodal logistics systems to establish itself as a top regional transportation center. (CAREC Program, 2023)

Thus, the government of Uzbekistan lacks definitive proof about its ability to determine all the BRI route directions and conditions, but it continues to pursue independent control through multiple initiatives. The country works to create its own transportation plans while joining efforts to build new corridors that leverage its strategic position and actively engage in regional infrastructure development.

3. *Institutional filtering and adaptation of formats*

One of the characteristic features of Uzbekistan's participation in the BRI Initiative (the BRI) is the state's desire to adapt international projects to domestic priorities. While foreign investment, particularly from China, plays a key role, the government strives to develop forms of cooperation that align with national interests and legislation.

The BRI projects sometimes become part of national development programs, which enables better coordination between external initiatives and domestic goals, as seen in "Uzbekistan 2030." The government of Uzbekistan works to direct foreign proposals toward serving its national priorities. (Kursiv Media, 2025).

The Sinologist interview participant explained that Uzbekistan imposed a condition for the Angren-Pap project construction, which required the use of locally trained workers who would learn Chinese technologies. The decision fulfills national goals by creating employment opportunities and maintaining technical project control while preventing future complete reliance on Chinese experts.

This practice enables external investments to become part of the national institutional framework while maintaining domestic oversight. Projects undergo a certain "filtering" aimed at ensuring compliance with national development programs and local conditions. This approach can reduce the risk of unequal partnerships and promote more balanced relationships between participants. (Government of the Republic of Uzbekistan, 2023).

4. Regional cooperation and practical implementation of initiatives

Uzbekistan supports regional BRI Initiative projects, which focus on building Central Asian transport networks, sustainable infrastructure, and green economic development. ("Uzbekistan Sets Bold Course for Green Transport and Infrastructure by 2030," 2025).

The nation maintains ongoing cooperation with SCO partners and Council of Turkic-Speaking States members and Central Asian Five format participants, and UN-sponsored international organizations. (United Nations Economic Commission for Europe, 2020).

This method can facilitate different development projects to work together for creating a unified regional infrastructure system that supports the BRI initiatives and other international and national programs. The collaborative method will help Uzbekistan reach its sustainable development targets and transportation connectivity goals while making it a reliable partner for regional development initiatives.

Uzbekistan participates in various international organizations to boost its economic influence while developing methods to implement the BRI Initiative throughout Central Asia. The main effect of this influence appears through the BRI project modifications, which include institutional changes and substantive adjustments:

The government of Uzbekistan incorporates Chinese initiatives into its national development strategy through the "Uzbekistan 2030" program.

- The organization works on project integration with EU and UN programs and Turkic Council initiatives.
- The initiative focuses on sustainable development through local production and employment creation.

- The initiative upholds equal partnership standards to prevent countries from becoming dependent on single nations.

Thus, Uzbekistan works to achieve the BRI implementation balance through regional coordination, which supports both national and international strategic goals.

5.2 Key the BRI Infrastructure Projects in Uzbekistan (Angren-Pap Railway Project, China-Kyrgyzstan-Uzbekistan Railway Project, Navoi Free Economic Zone Project).

5.2.1 Angren-Pap is a key project of the BRI initiative and its impact on spatial planning in Uzbekistan.

The Angren-Pap railway line represents a contemporary engineering accomplishment that shows how the BRI Initiative international infrastructure development projects transform spatial planning approaches in Uzbekistan. The 123 km railway link with its 19.2 km Kamchik Pass tunnel established a connection between the Tashkent Region and the Fergana Valley without needing to traverse Tajikistan. (Rahimov, 2018)

This increased transport connectivity, independence from external political risks, and provided year-round access to the eastern regions, where about a third of the country's population lives. (Rahimov, 2018)

Figure 12. Angren-Pap project on the map

Source: Open-access image from the Internet.



The ISMS expert who participated in the interview stated that this project has brought down transportation risks while creating better economic ties between neighboring areas. The eastern regions have become more accessible, while the cities situated near new transport routes now serve as industrial and logistics centers that drive local development. For border areas, this means increased employment and investment.

However, the infrastructural significance of the project is accompanied by shifts in the logic of spatial development.

The new railway corridor has strengthened the hierarchy of territories: the cities located along the route - Angren, Pap, Kokand - have received priority development as future logistics and industrial hubs. The example of Angren, where the development of a special industrial zone (including coal processing and logistics projects) intensified in 2017–2020, shows how major transport arteries form new “growth points” focused primarily on foreign economic functions. (Rahimov, 2018)

The project implementation process was an institutional hybrid. Uzbekistan acted as the customer, operator, and main source of financing, but key engineering and construction functions were delegated to the Chinese side, particularly the China Railway Tunnel Group.

In addition to technical participation, the Chinese side also influenced regulatory and procedural aspects - including simplifying land allocation procedures, accelerating approvals, and postponing environmental assessment deadlines - confirms the thesis about the growing influence of external actors on the institutional mechanisms of national urban development management. (Aminjonov, 2019)

The environmental risks associated with construction also exposed the conflict between the government's strategic objectives and sustainable planning principles. Despite the existence of Environmental Management Plans, World Bank documents documented instances of poor implementation of requirements for the control of wastewater, slope erosion, and construction waste. Moreover, the lack of awareness and participation of local communities increased the tension between the urgency of implementation and environmental commitments. (Aminjonov, 2019)

All this emphasizes that the Angren-Pap project has become not just a transport link, but a spatial and managerial shift, during which the following were transformed:

1. Administrative procedures.
2. Distribution of investments between regions.
3. Structure of the urban environment and the logic of its development.
4. Principles of local decision-making.

Table 7. Affects and Risks of the Angren-Pap Project

Source: The author's own elaboration

Dimension	Positive Impacts	Potential Risks / Drawbacks
Transport Connectivity	Year-round, direct connection between the Fergana Valley and central Uzbekistan	Overreliance on a single transport corridor; potential bottlenecks in the future
Urban and Spatial Development	Development of industrial and logistics zones in Angren and Pap	Shift away from socially-oriented planning; uneven regional development
Institutional Impact	Strengthening of project implementation capacity; experience with international actors	Simplification of procedures without sufficient oversight; external dependency
Environmental Sustainability	Potential to reduce road traffic and emissions through modal shift	Environmental degradation during construction, weak monitoring, and enforcement
Decision-Making Process	Uzbekistan led financing and political coordination	Key engineering and design decisions were influenced by Chinese contractors and standards

The Angren-Pap project allows us to consider the BRI initiative not only as a source of investment but also as a factor in the transformation of the spatial logic of state development. Its implementation demonstrates key features of "hybrid" planning: a combination of centralized management with external technological and investment pressure, a redefinition of territorial priorities, and a shift in the balance between sustainable development strategy and geoeconomic feasibility. This case shows how an outward "transport" project can have a profound institutional and territorial impact, redefining not only routes but also the meanings of national planning. (World Bank, 2018)

The Angren-Pap railway not only solved the problem of transport autonomy for eastern Uzbekistan but also became the framework for a new territorial development axis. After the line opened in 2016, urban integration processes intensified, especially in the Pap, Kokand, and Angren districts, where new industrial clusters and logistics hubs were established. (World Bank, 2018a)

This transport corridor also increased urban development pressure on the areas adjacent to the line. In several cases, functional zoning was changed: agricultural lands were transferred to the category of industrial development or logistics sites. This confirms the trend in which the BRI infrastructure projects provoke institutional and spatial adaptation at the local level.

According to reports from the World Bank and national environmental services, the construction of the tunnel under the Kamchik Pass was accompanied by increased risks of erosion, water pollution, and noise. Despite the presence of formal mitigation plans (Environmental and Social Management Plans), in some cases, there was poor compliance with environmental requirements and a lack of regular monitoring.

Moreover, limited public participation in environmental discussions and accelerated administrative procedures indicate that environmental sustainability was secondary to political-economic goals. (World Bank, 2018)

The project was implemented within the framework of bilateral cooperation: Uzbekistan acted as the main investor and coordinator, but the design and construction of the tunnel were completely transferred to the Chinese side - the China Railway Tunnel Group. This model confirms the theoretical concept of "limited sovereignty": despite maintaining legal control, key design decisions were determined taking into account the interests and technologies of Chinese contractors. (Komolitdinova & Lv, 2020)

Advantages and limitations of the project

Among the obvious advantages of the project:

- creation of an alternative route to the Fergana Valley without dependence on transit through Tajikistan.
- increase in cargo flow and integration of the region into national and international logistics.
- development of urban and industrial infrastructure in previously peripheral areas.

However, there are several limitations and risks:

- low tunnel capacity in the future: as indicated in scientific studies, "bottlenecks" in freight flows are already emerging today, and the project needs to expand its capacity to integrate into global routes between China, Central and South Asia.
- lack of a compensatory policy for remote regions not included in the orbit of the railway.
- instability of urban governance, expressed in a point-by-point approach to institutional reforms.

Strategic and political significance of the Angren-Pap project

The Angren-Pap railway project serves as an engineering and transport solution while establishing a fundamental framework for Uzbekistan's new spatial and political and geoeconomic structure. The project has reshaped both domestic and international policies of Uzbekistan, which now protects its regional transport position and deepens its participation in China's BRI Initiative. (World Bank, 2018)

The only way to connect the central region of Uzbekistan with the densely populated Fergana Valley required passing through Tajikistan before the construction of this line, which presented major geopolitical and logistical challenges. The situation became most dangerous during both winter months and times of political turmoil. The completion of the Kamchik Pass tunnel and the entire 123 km railway line established Uzbekistan's transportation independence while creating better domestic connectivity. (World Bank, 2018c)

The Angren-Pap project can now serve as a geopolitical symbol that demonstrates strategic autonomy through enhanced Chinese cooperation instead of operating independently from international partnerships. The railway functions as a domestic segment of the China-Kyrgyzstan-Uzbekistan transport corridor, which establishes Central Asia's connection to Europe and South Asia through the eastern Silk Road branch. (China Railway Engineering Corporation [CREC], 2025)

The project serves as evidence of Uzbekistan's capability to execute major infrastructure development without needing Western institutions for critical support. The project received World Bank funding and Chinese construction services, yet Uzbekistan used its domestic resources to complete the initiative, which shows its goal to create a hybrid partnership system that unites national oversight with international collaboration. (World Bank, 2018)

Thus, the Angren-Pap project can serve as both a transportation route and a political tool and spatial instrument that has enhanced territorial unity while decreasing foreign reliance and creating possibilities for the BRI integration and establishing Uzbekistan as a Eurasian transit hub. Its implementation demonstrates that infrastructure in the context of multi-level planning is becoming not only an object of construction, but also a means of political and geo-economic subjectivity.

Table 8. Project Snapshot: Angren-Pap railway

Source: Author's own elaboration

General Information	
Project Name	Angren–Pap Railway Line
Location	Tashkent and Namangan regions, Uzbekistan
Total Length	123.1 km
Key Structure	Kamchik Pass Tunnel (19.2 km) — the longest railway tunnel in Central Asia
Construction Period	2013–2016
Commissioning Date	June 2016
Financing and Stakeholders	
Total Project Cost	Approximately USD 1.9 billion
Funding Sources	Government of Uzbekistan, World Bank (USD 195 million), Exim Bank of China
Main Client and Operator	Uzbekistan Railways JSC (O'zbekiston Temir Yo'llari)
Chinese Contractor	China Railway Tunnel Group (tunnel construction)
Objectives and Significance	
Project Objectives	Ensure year-round, sovereign rail access to the Fergana Valley; reduce dependence on external transit routes
Geopolitical Significance	Forms part of the future China–Kyrgyzstan–Uzbekistan corridor; strengthens national territorial cohesion

Spatial and Urban Development Effects

The Angren-Pap railway line construction eliminated previous transportation routes between the Fergana Valley and Uzbekistan that ran through Tajikistan. The transportation route through Tajikistan brought both operational challenges because of customs inspections and border delays, and geopolitical risks because of deteriorating relations between countries. This situation harmed the sustainability of the national transport system and made the most important part of the country vulnerable - a densely populated and industrially active region. (Imomnazar, 2018)

The Angren-Pap project was a key infrastructure step towards strengthening transport sovereignty. The 123.1 km-long line became operational in 2016 when it included a 19.2 km tunnel through Kamchik Pass, which became the longest tunnel in Central Asia at that time. The

World Bank report (P146328) shows that the new route cut down freight transportation distance by 140 km while reducing costs by up to 30%. (World Bank, 2018)

The improved transportation network has created a strong link between production areas in eastern engineering and agricultural zones and central and western consumer and processing centers throughout the country. The improved logistics system enhances Uzbek export competitiveness by making transportation faster and less expensive for fruits and textiles, and machinery products.

From the point of view of spatial planning, Angren-Pap became an infrastructure axis along which new growth clusters began to form. An opportunity arose to redistribute cargo flows and investments from capital agglomeration to the eastern regions. The literature (Mirsaidov et al., 2021) emphasizes that the Angren-Pap project opened the way to decentralization and diversification of logistics infrastructure, reducing congestion on existing routes and strengthening the territorial balance of spatial development.

Thus, the significance of the project goes far beyond purely transport modernization. It has changed the geography of connectivity within the country, strengthening the vertical and horizontal integration of regions, which corresponds to modern approaches to spatial planning within the BRI initiative. Moreover, the project can be seen as an element of strengthening territorial sovereignty, reducing dependence on external political factors, and strengthening internal consolidation.

Transformation of the role of hub cities

The construction of the Angren-Pap railway initiated qualitative changes in the spatial structure of the cities located along the route. This primarily concerns Angren, Pap, as well as cities such as Kokand and Andijan, which received a new status in the national and regional hierarchy. (Rahimov, 2018)

The city of Angren, known primarily as a coal mining center before the project, has become a transport and industrial hub thanks to the Kamchik Pass tunnel and the new railway connection. The expansion of existing capacities and the construction of related logistics infrastructure (interchanges, terminals, transfer stations) have increased its importance as an entry point to the Fergana Valley. According to a study [Safarova, 2023] and data from the Ministry of Infrastructure of Uzbekistan, the area has seen an increase in the number of new residents in the Angren Free Economic Zone, including Chinese logistics and manufacturing companies. (Rahimov, 2018)

The town of Pap became the railway exit point into the valley and became a key intersection of rail and road transport. It began to function as a distribution hub, connecting new routes with the existing eastern railway network. The previously peripheral town acquired the significance of a secondary urbanization center, where the influx of labor increased, demand for housing grew, and related sectors began to develop - trade, services, and repair infrastructure. (Masharipov, 2025)

The transportation modernization efforts brought two benefits to Kokand and Andijan by enhancing their access to central regions of the country and international trade routes, specifically the China-Kyrgyzstan-Uzbekistan railway. The improved transportation network enabled export-focused production centers to develop, which helped local businesses access foreign markets. (Masharipov, 2025)

Thus, the Angren-Pap project not only changed the transport geography but also transformed the functional profile of the cities. Previously, industrial-monofunctional or secondary settlements began to perform multifunctional roles: logistics, production, and services. This, in turn, requires a revision of urban development policy: updating master plans, developing social infrastructure, and sustainable transport solutions in the cities themselves.

From the point of view of spatial planning, such transformations can be interpreted as the beginning of the formation of new subregional “growth poles”, which corresponds to the logic of integration into global transport and production chains. At the same time, this creates challenges: increased pressure on local resources, the need for more flexible management of urban growth, and the minimization of environmental and social costs.

Development of industrial and logistics zones

One of the most significant spatial effects of the Angren-Pap project was the formation of new and activation of existing industrial and logistics zones along the railway route. The new railway corridor enables better transportation connections, which drives the development of the region into a cluster urbanism that enhances export-oriented functions. The Angren Free Economic Zone stands out as a key factor because its location near the railway junction became more advantageous after the line started operations. (Vakulchuk & Overland, 2019)

As emphasized in the study by Abdurakhmanov and Khakimov (2022), the development of the FEZ was accelerated by improved logistics conditions, which reduced delivery times and reduced transportation costs for products. Also, as indicated in the World Bank report on the Angren-Pap project (P146328), the modernization of logistics contributed to an increase in the number of

residents and the expansion of the investment portfolio of the zone. (Vakulchuk & Overland, 2019)

Foreign investment, including from China, has increased since the line's launch. Chinese companies have begun to participate not only in the construction but also in the operations of many production facilities, as confirmed by the World Bank's Implementation Status & Results Report (FY2017). This shows that the railway project has become part of a broader economic strategy that integrates local production zones into global supply chains. (World Bank, 2018a)

In addition to Angren, the cities of Pap and Kokand have become sites for the formation of new logistics hubs, including multimodal terminals and regional hubs. The study " The role of construction of the Angren-Pap railway line ..." (2021) notes that the project in the Pap area has increased the flow of goods and created demand for warehouse and distribution infrastructure. This has led to the expansion of land use zones, the development of related sectors (service, logistics, technology), and an increase in the burden on urban development services. (Umarov & Sintsov, 2021)

However, the fast development pace could generate multiple spatial and institutional problems. In particular, the urgent need to convert land areas for industrial use has resulted in rapid zoning changes and fast-track permitting processes, sometimes disregarding existing master plans. The socio-environmental assessment report RP16960V10 shows that certain project areas were built without proper community participation and sufficient environmental studies, which might result in non-compliance with sustainable planning standards. (World Bank, 2018c)

Pressure on local urban planning

The construction of major infrastructure projects, including the Angren-Pap railway line, may create substantial strain on existing local urban planning regulatory systems. The construction and operational phases of these projects required typical features that are common in global infrastructure strategies, including fast decision-making and resource deployment, and flexible procedures. However, all this often comes into conflict with the principles of sustainable and balanced territorial development.

First, the project required changes to the master plans of settlements adjacent to the route. In the areas of Pap, Angren, and Uchkurgan, there were cases of redistribution of land functions - from agricultural and recreational purposes to industrial and transport. In some cases, these changes were made in an accelerated manner, which undermines the legitimacy of the planning process and reduces the quality of spatial analysis. The World Bank report (Disclosable Restructuring Paper, P146328) notes that some of the zoning changes were carried out in

parallel with the design, without a full assessment of the urban planning consequences. (World Bank, 2021)

Secondly, the procedures for land allocation and issuance of permits were simplified. In several cases, land plots were provided for investment projects without open tenders, with a minimum level of public discussion. This is confirmed in the project's environmental and social impact report (RP16960V10): local authorities were faced with the need to expedite access to resources, which led to the formalization of exceptions in the existing legal system. (World Bank, 2021)

In addition, there is an expansion of informal planning practices – when urban planning decisions are made “bypassing” traditional channels, based on the logic of attracting investment, rather than on the needs of the local population. Such practices are often initiated from the outside – by foreign contractors or international financial institutions – and require rapid adaptation of local regulations.

In conditions of limited human and institutional resources, local authorities are not always able to provide a comprehensive assessment of proposed changes, which leads to an increase in planning errors and a decrease in the sustainability of decisions. In some cases, there was a lack of adequate coordination between ministries and khokimiyats, which created duplication of functions and weakened the strategic integrity of processes. (CABAR.asia, 2024)

Social and environmental impacts

The Angren-Pap project brought about major social and environmental changes throughout the area while functioning as major infrastructure development. The project displayed common characteristics of large transport initiatives by showing how economic expansion conflicts with the protection of vulnerable local communities and natural environments.

The social effects of this project contain both beneficial and detrimental elements. The construction of the line generated employment opportunities, which mainly benefited areas with high jobless rates, such as Pap and Angren districts, thus stimulating local economic growth during the short term. The enhanced transportation network brought market access and healthcare and educational opportunities to rural areas, which had limited previous access to these services.

On the other hand, the World Bank's Resettlement Plan RP16960V10 shows that more than 70 households experienced forced or partial relocation during project implementation, while several families lost their land without proper payment or discussion. The loss of land through forced relocation caused small-holder farmers to experience reduced income and social breakdown.

The compensation plans failed to materialize properly during field implementation because the monitoring system lacked strength. (World Bank, 2015)

In the environmental area, the project can also pose serious risks, especially in connection with the construction of a tunnel through the Kamchik Pass, which is almost 19 km long. According to the Environmental Impact Assessment (WB 2017), the impact zone included water protection areas, forest areas, and migratory routes of wild animals. Soil disturbances, erosion processes, and local pollution were recorded, especially in construction bases and excavations. Although the project envisaged restoration measures, including reclamation and forest planting, according to monitoring data for 2017 (FY2017 AR), a significant part of the measures was implemented with delays or in a limited scope. (World Bank, 2017)

Of additional concern are the risks of industrial pollution associated with the expansion of production facilities near rail infrastructure. The Angren SEZ faces a severe environmental burden because its industrial facilities and cargo operations may intensify the strain on air quality and water resources. The current environmental monitoring system operates with restricted capabilities, while local community involvement in monitoring activities seems to remain minimal. (World Bank, 2017)

The Angren-Pap project can show how economic development through modernization creates negative impacts that affect both people who lack protection and natural ecosystems. The situation requires better environmental and social assessment systems and transparent land management practices, and built-in public participation mechanisms for spatial planning.

Institutional Arrangements and Chinese Involvement

The Angren-Pap project is an example of a complex institutional configuration in which national structures of Uzbekistan, international financial institutions, and foreign contractors, primarily Chinese ones, interacted. This architecture clearly illustrates how the initiatives within the framework of the BRI not only transform the infrastructure landscape but also affect decision-making mechanisms, management procedures, and the regulatory framework.

The project preparation stage involved coordination between the Ministry of Transport of Uzbekistan and the Ministry of Finance, and JSC "Uzbekiston Temir Yollari" (Uzbek Railways) and international donors, who included the World Bank and the OPEC Fund for International Development. The Chinese company China Railway Tunnel Group (CRTG) joined forces with local partners to design and build the Kamchik tunnel, which stands as a vital complex engineering component of the line. (Jash, 2024)

The project faced a crucial challenge because of the challenging negotiations about the Chinese contractor participation terms. According to an interview with an Uzbek sinologist, during the initial consultations, the Chinese side insisted on using mainly its labor force, which corresponded to the usual practice of the BRI projects in countries with low institutional density. (Jash, 2024)

However, Uzbekistan took a tough stance, stating that the project could only be implemented if local personnel were involved and jobs were created for its population. Otherwise, as emphasized in official statements, the government was ready to abandon the project. This episode demonstrates that, despite its economic and technical dependence on external contractors, Uzbekistan sought to maintain control over critical aspects of implementation - primarily in the social and labor spheres. The Angren-Pap project became one of the first precedents where a recipient country insisted on observing the principle of sovereign agency in the context of the BRI.

The result of this compromise was a proportional distribution of labor resources, in which the Chinese side concentrated on highly specialized engineering work, while the local population performed the bulk of unskilled and semi-skilled labor. This not only reduced social tension but also ensured a positive economic effect at the local level.

From an institutional point of view, the implementation of the project was accompanied by several changes: The Cabinet of Ministers and Presidential Administration maintain control over all decision-making processes. The permitting process operates at a fast pace for both land allocation and ecological assessments. Partial adaptation of management logic to Chinese standards (strict schedules, priority of construction over public procedures). (Jash, 2024)

However, the Uzbek side actively worked to keep the project under national laws, so it did not need to adopt the full Chinese implementation model. The case shows how Uzbekistan successfully maintains its internal strategic interests while accepting foreign initiatives.

Environmental challenges and problems of sustainable planning

The Angren-Pap railway line project, including the construction of the Kamchik tunnel, was accompanied not only by infrastructural and institutional transformations, but also by significant environmental risks, many of which were not given due systematic consideration at the time of design. The implementation of the project became a serious test for the environmental regulation and spatial planning system of Uzbekistan, demonstrating the weaknesses of the existing institutional apparatus in the context of sustainable development.

One of the most sensitive elements of the project was the construction of the Kamchik tunnel, which passes through the Kuraminsky mountain range. As noted in the World Bank reports and the Environmental Management Plan (WB), this zone is characterized by increased seismicity, vulnerable soils, and the presence of water protection areas and migration routes for wild animals. Disturbance of the landscape during construction led to slope erosion, deforestation, changes in the hydrological regime, and local pollution (from construction equipment and wastewater), despite the presence of formal compensation programs. (World Bank, 2017)

The implementation of environmental commitments proved particularly problematic. According to the FY2017 AR document, land reclamation, vegetation restoration, and pollution monitoring measures were either delayed or partially implemented. Some activities envisaged as mandatory conditions of the loan agreement were either not funded or implemented formally. The project timeline and investor pressure impose some difficulties for local authorities and contractors to follow environmental standards properly. (World Bank, 2017)

In addition, the project lacked a complete strategic environmental assessment (SEA) to evaluate its environmental impact. The planning process focused on individual route sections, which prevented a complete understanding of how the project would affect the regional ecological system as a whole. The spatial planning process concentrated on route operational design instead of protecting ecological corridors and maintaining sustainable landscape conditions. The route's proximity to rivers and underground aquifers became most apparent when it ran through the Aktash River valley. (World Bank, 2017)

At the same time, the project revealed how the environmental control system remained exposed to institutional weaknesses. The State Committee on Ecology, together with khokimiyats and sanitary and epidemiological services, lacked both coordinated authority and sufficient resources. Mechanisms for public discussions and feedback from the local population were virtually absent, and information openness on environmental safety issues remained low. As independent experts emphasize, during the construction process, no systematic approach was developed to include environmental aspects in the strategic planning of transport corridors, which limits adaptation to future projects of a similar scale. (UNECE, 2020)

Thus, Angren-Pap became not only an infrastructural challenge but also an environmental one. It demonstrated that the implementation of the BRI projects on national territory requires not only institutional coordination but also mature procedures for assessing sustainability and civil society participation. Without such mechanisms, spatial planning risks becoming an instrument of one-dimensional modernization – with a subsequent increase in environmental and social costs.

Overall Assessment

The Angren-Pap railway project can serve as a prominent example of extensive infrastructure development that combines national strategic goals with the transnational development principles of the BRI Initiative (the BRI). The project enables researchers to study both the accomplishments and difficulties alongside the general spatial planning transformations that result from external influence and domestic reforms.

On the one hand, the project brought obvious advantages:

It eliminates a strategic transportation risk for Uzbekistan because it establishes a direct link between its central and eastern territories without needing to traverse Tajikistan.

The railway integration between regions led to decreased transportation expenses and better workforce movement and economic growth throughout the route.

The construction of the line enabled the development of new industrial and logistics platforms, including the Angren FEZ and transport centers in the Pap region.

International and Chinese construction companies brought modern tunnel construction methods and organizational practices to the project through their involvement.

However, at the same time, the project revealed several systemic shortcomings and risks:

In terms of environmental sustainability, the implementation was accompanied by several negative impacts on natural areas, weak implementation of compensation programs, and insufficient transparency of monitoring.

In social terms, the project required social relocation of residents and took their land through forced measures while providing insufficient protection and compensation despite receiving international funding.

The project followed a reactive approach to spatial planning because it focused on corridor functionality instead of creating sustainable development plans for the surrounding areas.

Local authorities were involved only fragmentarily, and coordination procedures between the center and the regions showed a weak institutional link.

Of particular interest is the analysis of the project as an example of “hybrid governance,” typical of many of the BRI initiatives. On the one hand, Uzbekistan demonstrated agency by setting strict conditions on the use of labor and formally retaining control over the project. On the other

hand, the participation of Chinese contractors, the transfer of management logic, and regulatory exceptions (fast-track land allocation, simplified permits) show a de facto redistribution of powers in favor of external actors.

In this context, Angren-Pap demonstrates how infrastructure projects now combine the traditional hierarchical governance model with hybrid systems that unite national and regional, and transnational interests at the implementation stage. The integration of national and regional interests with transnational elements during infrastructure development creates various obstacles that affect government coordination and territorial sustainability, and investment appeal.

Figure 13. Kamchik tunnel of the Angren-pap project.

Source: Open-access image from the Internet.



Thus, the Angren-Pap project functions as a dual example that proves infrastructure modernization through global initiatives while revealing the problems that arise when institutional development and planning tools remain underdeveloped.

The Angren-Pap railway project stands as a primary infrastructure development of the post-Soviet era in Uzbekistan. The project has achieved technical and logistical success while showing how it transformed spatial policy and institutional practices and international relations.

This chapter showed that the project should not be viewed as an isolated engineering event, but as a multi-level planning and management phenomenon that reflected the main trends of modern urban development in the context of external pressure and internal transformation.

In terms of spatial effects, the railway line has ensured territorial connectivity between key regions, removing transport dependence on external transit. New industrial, logistics, and residential hubs are being formed along the route, promoting economic activity and regional integration. In this sense, the project has become an axial structure for further spatial planning.

Institutionally, the project illustrates the logic of hybrid governance, where national authorities retain formal control, but key decisions – especially regarding design, timing, and standards – are made with the interests of an external investor in mind. The case of Chinese contractors is particularly significant: despite its dependence on China's technological and engineering capabilities, Uzbekistan was able to impose its terms of participation – particularly in terms of the use of labor and compliance with local requirements.

The project revealed multiple system weaknesses, which included environmental threats and disorganized sustainable planning and inadequate compensation systems, and insufficient local community involvement. The research shows that strategic impact assessment tools need development to address these weaknesses, while agencies must enhance their coordination abilities, and infrastructure projects must adopt sustainability principles as institutional standards.

Thus, the Angren-Pap project serves as a small-scale example of how Uzbekistan's spatial policy evolved from state-controlled planning to open but unbalanced communication with outside entities. The dialogue between stakeholders has created a new urbanization framework that uses infrastructure as a tool to shift power distribution and resource allocation and set new development priorities.

5.2.2. The China-Kyrgyzstan-Uzbekistan (CKU) Railway Project: Spatial, Political and Institutional Dimensions

General information about the project

The China-Kyrgyzstan-Uzbekistan (CKU) railway project serves as a vital transportation project that establishes a direct route between Chinese western provinces and Central Asia to deliver goods more efficiently to southern and western destinations, including Iranian and Pakistani ports and Middle Eastern destinations. (Liu, 2024)

The project involves the construction of a 454 km railway line with 260 km extending through Kyrgyzstan territory. The railway begins in Kashgar, China, before reaching the Torugart border crossing and continues through Kyrgyzstan's mountainous terrain, which includes At-Bashi and Arpa and Karakulja, and Jalal-Abad, before entering Uzbekistan through Andijan. The road will connect to the existing Uzbek network, which will enable future access to the Fergana Valley and the Trans-Afghan route. (Liu, 2024)

Figure 14. The China-Kyrgyzstan-Uzbekistan (CKU) Railway Project on the map

Source: Open-access image from the Internet.



The project entered its discussion stage at the beginning of the 2000s. The first substantial agreements about the project emerged in 2012. The project encountered various delays because of political instability in Kyrgyzstan and disagreements about the route and funding issues, and

geological obstacles. The parties reached a memorandum of understanding during the SCO summit in Samarkand in 2022 to begin project execution. The parties finished approving the feasibility study (FS) by September 2023, before Uzbekistan declared its intention to start construction work in 2024. (Liu, 2024)

The following are involved in the implementation of the project:

The governments of China, Kyrgyzstan, and Uzbekistan will coordinate at the interstate level. China Railway Corporation and China Railway International Group are key technical and contracting entities. The Asian Infrastructure Investment Bank (AIIB) and China Eximbank are expected to participate in financing.

The total cost is estimated at 4.5-5 billion US dollars. According to the memorandum, China will finance the section on its territory and, possibly, part of the credit support for Kyrgyzstan. Uzbekistan will finance its sections to a greater extent from the budget and international funds. Construction is planned in 3 stages: (World Bank, 2021)

1. Kashgar - Torugart section (PRC)
2. Main mountain section in Kyrgyzstan
3. Andijan connecting segment (Uzbekistan)

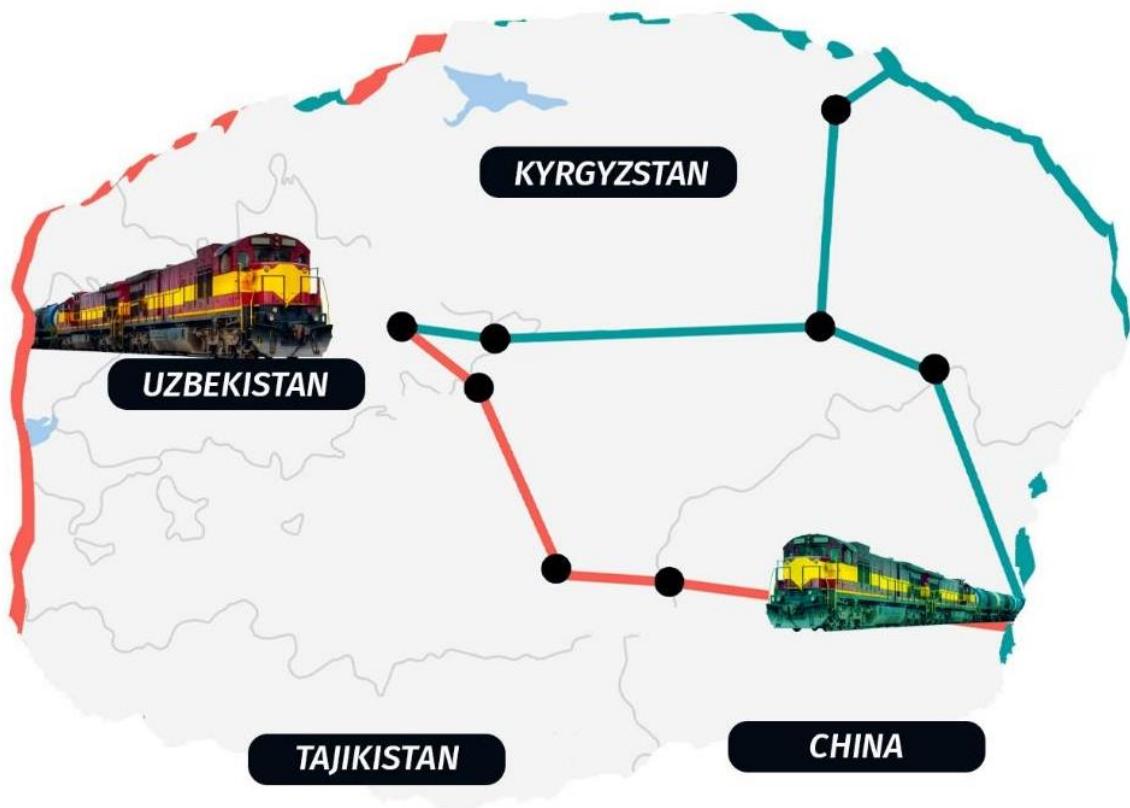
Under favorable conditions, the project can be implemented within 5–7 years from the start of construction.

Geopolitical and strategic significance

The China-Kyrgyzstan-Uzbekistan (CKU) railway project functions as an infrastructure project that enables strategic changes to regional logistics operations and political-economic dynamics in Central Asia. The BRI Initiative (BRI) includes this project to create multiple Chinese land routes, which decrease Kazakhstan and Russia route dependency and establish direct trade connections to Middle Eastern and South Asian, and European markets. (World Bank, 2021)

Figure 15. CKU project connectivity

Source: Open-access image from the Internet.



The CKU enables China to expand its economic and political power in Central Asia through infrastructure cooperation, which serves as a tool for soft power and institutional penetration. The project serves as a development tool for Kyrgyzstan and Uzbekistan to achieve economic growth while moving beyond their status as logistics periphery countries under current sanctions and global transportation changes following 2022. (Chen, Turaeva, & Wang, 2025)

The project holds exceptional value for Uzbekistan because it provides alternative access to seaports via China and Pakistan (within the framework of possible integration with the Trans-Afghan Corridor and the CPEC project). The project enhances Uzbekistan's transit independence by reducing its need to offer two seaport access routes through China and Pakistan, which could integrate with the Trans-Afghan, Russian, and Kazakh routes while giving the country more freedom to choose its foreign economic strategies. (Chen, Turaeva, & Wang, 2025)

CKU fits into Uzbekistan's doctrine of multi-vectors and strengthening the "southern vector" as an alternative to the northwestern direction. The evaluation of expert opinions from the interview shows that participants have different views about the project's importance.

The experts from ISMS view the Ferghana Valley as a vital transit center that holds strategic value for both regional and international operations. The TashkentboshplanLITI experts concentrate on regional infrastructure modifications that affect both local agricultural producers and industrial zones.

The economist points out financial sustainability problems because the project creates new debt obligations while the benefits from the project flow disproportionately to eastern regions compared to western regions. The China expert emphasizes operational benefits, which include shorter delivery times that enable logistics growth and production facility expansion.

Table 9. The distribution of experts' opinions

Source: Author's own elaboration

Perspective	Impact on Spatial Development & Logistics	Key Regions	Changes in Transport Flows	Risks	Mitigation / Opportunities
ISMS	Reshapes transport flows; Fergana Valley becomes a key transit hub; reduces dependence on the northern route	Andijan, Namangan, Fergana Valley	Cargo diverted from Kazakhstan	Social conflicts, limited community participation	Strengthening the transit role, strategic advantages
TashkentboshplanLI TI	New routes improve logistics for farmers and industrial zones; regional plans adjusted	Eastern regions	Adjustments in regional infrastructure plans	Limited public involvement; need for plan adaptation	Regional infrastructure and plan adjustments
Economist	Logistics improved, but requires large loans — debt burden; benefits are unevenly distributed	The East benefits more than the West	Limited financing for alternative projects	Debt dependency, reduced economic autonomy	Planning economically viable projects despite risks
China Expert	Delivery times halved; demand for logistics hubs; growth of warehouses and production zones	Eastern Uzbekistan, Fergana Valley	Faster deliveries; more logistics hubs	Potential uneven regional development of logistics zones	Growth of local logistics and industrial zones
State Committee for Ecology	Environmental impact on mountain and forest areas ~120 ha forest loss; soil erosion risk 15–20%	Jizzakh and Fergana regions	Not directly addressed	Deforestation, soil erosion, and ecosystem pressure	Reforestation, protective engineering structures, drainage systems

As can be seen from the table, experts view the CKU railway from different but complementary perspectives: ISMS emphasizes its strategic and geopolitical significance, TashkentboshplanLITI focuses on regional infrastructure changes and improved logistics, the economist highlights debt risks and the uneven distribution of benefits, and the China expert points to reduced delivery times and the development of local logistics hubs.

The CKU faces competition with other regional routes because it presents a potential threat to the Trans-Caspian Transport Route (TITR), which spans through the Caspian Sea and Azerbaijan and Georgia. The CKU provides a more direct land route with reduced transshipment requirements, which makes it more appealing for both operational and financial reasons. The route faces criticism because of geological obstacles in Kyrgyzstan and expensive construction costs, and Chinese funding requirements. (Chen, Turaeva, & Wang, 2025)

In the broader context of the BRI, the CKU appears to demonstrate a new stage in China's expansion strategy in Central Asia: from linear corridors to a more complex, networked model linking infrastructure projects with economic zones, logistics, and energy. This makes the railway not only a transport tool, but also a geo-economic tool, allowing China to gain a foothold in the region not through military bases, but through institutional and investment influence. (Chen, Turaeva, & Wang, 2025)

Thus, CKU can be considered as a case of spatial planning through geopolitics, when not only technical but also political parameters determine the configuration of routes, the structure of investments, and the distribution of benefits. Its implementation can mean a reformatting of the logic of regional interaction, where space ceases to be an exclusively national resource and becomes an arena for transnational design.

Expected impact on spatial and regional development.

The CKU railway project has the potential to transform the geographical layout of eastern Uzbekistan, particularly the Fergana Valley and southern and western areas of Kyrgyzstan. The Kashgar to Jalal-Abad to Andijan railway line can serve as both a transportation route and a development center for economic and urban expansion in the bordering territory. The implementation of this extensive project can create substantial effects on the spatial development of Uzbekistan.

The analysis bases its assessment of CKU railway spatial planning effects through expert evaluations and initial project materials, and research on comparable Central Asian and the BRI Initiative (BRI) infrastructure projects. The World Bank (2019) and Asian Development Bank (ADB, 2022) research shows that new transportation routes create economic geography

changes through industrial concentration and foreign investment attraction, and logistics center development.

The UNECE (2020) provides guidance on transport-oriented development, which shows that railway infrastructure development results in new urban clusters that require updates to current city master plans. The BRI projects in mountainous regions and international borders (Chen & Jimenez, 2020) show that better connectivity leads to increased trade activities while reshaping economic activity locations and establishing industrial and urban development centers near transportation routes.

Based on this combined evidence, the impact of the CKU railway on spatial planning is expressed in the following aspects:

Strengthening the Fergana Valley as a Logistics Hub.
The CKU railway commissioning process will establish the Fergana Valley as a major industrial and logistics center for Central Asia. The cities of Andijan, Fergana, Marginal, and Kokand have an emerging infrastructure system and dense population, and strong manufacturing base, which enables them to support export-oriented cluster development. By linking these cities to an international route through Kyrgyzstan, the CKU could reinforce the valley's role in regional exports, industrial specialization, and integration into global value chains (World Bank, 2019; UNECE, 2020).

Potential for the Development of Industrial Zones along the Route
The preliminary studies show that industrial zones should be built near upcoming railway stations in Jalal-Abad and At-Bashi regions. The zones will enable export goods processing and draw Chinese foreign direct investment to build assembly facilities and logistics centers, and export-focused manufacturing sites. The free economic zones of Kokand and Andizhan-Farm in Uzbekistan will become more appealing to investors because new investments can join these established zones. Research on BRI infrastructure development indicates that better transportation links generate industrial clusters near transportation routes, which boost regional manufacturing strength and export success. (ADB, 2021; Chen & Jimenez, 2017).

Reformation of Internal Logistics Centers
Integration of the CKU into the national railway network will necessitate reorganization of internal logistics and freight flows. Key directions, such as routes toward Tashkent, Termez, and Navoi, will require redesigning to optimize cargo distribution. Mid-sized cities such as Pap or Kuvasay may evolve from peripheral nodes to intermediate distribution hubs. This spatial reorganization

implies the development of new industrial, warehouse, and transport zones, and will require updates to city master plans, urban zoning, and infrastructure planning (World Bank, 2019).

Possibility of Forming New Urban Clusters

The CKU railway enables the creation of linear urban clusters, which represent a spatial pattern where cities and settlements develop along transportation routes. The Chinese BRI Initiative projects demonstrate this pattern through their corridors, which drive urban growth and create industrial zones and transportation-based residential areas.

The highway and international market access in Jalal-Abad and southern Issyk-Kul will enable the development of new settlements that focus on industry and transportation. The CKU railway serves two purposes by enhancing logistics while creating a transformative impact on regional socio-economic development through resource and investment redistribution and city function reorganization. (ADB, 2021; Chen & Jimenez, 2017)

Thus, CKU railway functions as a transformative system that restructures both transportation networks and regional economic structures by shifting resources and city functions toward network-based operations.

Institutional configuration and logic of hybrid governance

The China-Kyrgyzstan-Uzbekistan (CKU) railway project appears to be a classic example of “hybrid governance” within the BRI Initiative, where the interests of national governments, transnational companies, and Chinese financial institutions intersect. What makes CKU unique is that its implementation requires not only technical coordination but also institutional alignment of standards, priorities, and accountability mechanisms among the three countries – China, Kyrgyzstan, and Uzbekistan.

Despite the formal trilateral nature of the project, China acted as the leading actor throughout the negotiation process, possessing both financial and project resources. The choice of route, including its passage through Torugart and Jalal-Abad, was actively lobbied by the Chinese side as the most advantageous for its logistical and strategic interests. The agreement on the route dragged on for more than two decades due to disagreements between Kyrgyzstan and Uzbekistan over the route, investment volumes, and distribution of benefits. (Khitakhunov, 2024)

Key decisions on the technical specifications and routing were made with the participation of the Chinese Ministry of Transport, as well as state and quasi-state entities such as China Railway Group and Eximbank of China, which are expected to be the main contractors and investors in the project. The national transport ministries in Kyrgyzstan and Uzbekistan played a coordinating

role, but their agency was limited to agreeing on the terms proposed by China. (Khitakhunov, 2024)

As the practice of other infrastructure projects within the BRI shows, the Chinese side strives to maximally reproduce its technical standards, including track width, signaling system, geotechnical stabilization methods, and approaches to safety. It is assumed that Chinese standards will also be applied in CKU, which creates potential difficulties for docking with the existing railway system of Uzbekistan (post-Soviet standard) and requires adaptation of local norms and procedures.

In addition, Chinese contractors often implement projects on the EPC (Engineering, Procurement, Construction) model, meaning that they undertake not only construction but also design. This increases the dependence on Chinese engineering logic and design thinking, reducing the degree of involvement of local architectural and planning structures. (Khitakhunov, 2024)

CKU also illustrates one of the key challenges for recipient countries of Chinese investment – the risk of asymmetric dependence. The project will be largely financed by Chinese credit institutions, which may entail not only economic but also political obligations. Kyrgyzstan has already faced criticism regarding the elevated level of debt burden to China (in the framework of other projects), and CKU may deepen this dependence. (Chen, Turaeva, & Wang, 2025)

On the other hand, as the statements of the Uzbek side show, Tashkent seeks to minimize external influence by participating in defining the terms of the project, seeking to take into account national interests and possible localization of part of the production processes. In this context, Uzbekistan can use the experience gained during the implementation of the Angren-Pap project, where the country insisted on attracting local labor and adapting procedures to domestic legislation. This approach allows for the construction of a more balanced model of interaction, in which formal sovereignty is preserved while participating in a transnational initiative. (Chen, Turaeva, & Wang, 2025)

Thus, the CKU project is not only an engineering task, but also an institutional construction within which the countries of the region try to balance the need to attract external resources with maintaining their control. This makes the CKU a clear example of planning under conditions of limited sovereignty, where the final governance structure is determined not by internal administrative procedures, but by the logic of negotiations between asymmetric actors.

Environmental and Social Challenges

The CKU railway project that passes through mountainous and sensitive ecological zones and seismically active areas generates substantial environmental protection and sustainability problems. The project maintains its strategic and economic value, but environmental protection and social sustainability face insufficient attention during this development phase.

This is demonstrated by the following factors:

Geological and environmental risks: The regions experience frequent landslides and avalanches, mudflows, and seismic events because of their geological makeup and mountainous terrain. Major infrastructure development faces risks from unstable slopes and high seismic activity in the Tien Shan Mountain range, which spans through the project area. The construction of extensive railways through these challenging conditions leads to higher soil erosion and slope instability, which causes damage to rare species habitats, including snow leopards (*Panthera uncia*) and Central Asian ibex (*Capra sibirica*). Studies conducted in alpine regions demonstrate that built transportation systems lead to biodiversity decline and block essential wildlife migration pathways. (Chen, Turaeva, & Wang, 2025)

Hydrological considerations: The mountainous areas of Kyrgyzstan serve as essential water storage systems that feed both local rivers and international water bodies, including the Syr Darya. The uncontrolled modification of drainage systems, together with unintentional construction pollution, creates a chain reaction that threatens water resources and irrigation systems and hydroelectric power generation in Uzbekistan, Kazakhstan, and Tajikistan. The execution of previous hydro-engineering projects in Central Asia has proven that river course modifications and chemical releases, and sedimentation processes create conflicts regarding shared water resources. (Chen, Turaeva, & Wang, 2025)

Insufficient control over sustainable design: The current situation lacks a complete transboundary environmental impact assessment (TEIA), which serves as the recommended standard for designing infrastructure in environmentally critical zones. The World Bank, together with the UNECE Espoo Convention, through their international guidelines, requires TEIA to evaluate ecological, hydrological, and social impacts before project approval becomes possible. The environmental assessment process in the BRI projects shows evidence of insufficient attention to environmental factors through EPC (Engineering, Procurement, and Construction) contracts managed by Chinese contractors. The Himalayan and Southeast Asian projects following this model have shown evidence of habitat destruction and soil deterioration and rising flood probabilities. (WB, UNECE, 2019)

Risk of compromised design standards due to geopolitical and economic pressures: The project's fast pace under geo-economic pressure creates a risk that design standards will be compromised because of economic and geopolitical factors. The need to rush the project completion under geo-economic time constraints could lead to reduced engineering quality and environmental protection measures, and monitoring standards. The history of major infrastructure projects built in seismic and mountainous areas demonstrates that cutting corners during construction leads to unstable structures and elevated upkeep expenses, and permanent environmental damage, which endangers both the railway system and its natural environment. (Burman, 2024)

Social impacts: resettlement and land acquisition

The project may impact local community interests that reside near the planned route, especially in rural areas of Kyrgyzstan and Uzbekistan. The project may force people to relocate from their homes and result in land confiscation and reduced income from farming and handicraft activities. The project needs to establish clear compensation systems that provide accurate loss assessments while involving residents during decision-making processes. (Burman, 2024)

The lack of established procedures can create a high probability of social conflicts, which will primarily affect disadvantaged regions with minimal financial resources and restricted access to legal safeguards.

Project Assessment: Potential and Risks

The China-Kyrgyzstan-Uzbekistan (CKU) railway project serves as a vital transportation project for Central Asia because it offers economic development opportunities while presenting various challenges. The project demonstrates how the BRI Initiative (BRI) operates through its effects on national and transnational spatial policy transformation and planning, and negotiation processes.

The project establishes a direct transportation route between China and Uzbekistan, which outcompetes existing routes that pass-through Kazakhstan or Russia. The project enables Uzbekistan to access Chinese and South Asian, and Middle Eastern markets through direct routes that bypass northern infrastructure requirements. The project enhances logistical self-reliance because it operates independently from northern infrastructure during times of worldwide political instability. (Asian Development Bank, 2022)

The CKU project could also create economic connections between eastern Uzbekistan and southern Kyrgyzstan through industrial zones and logistics terminals, and export clusters. The project will reshape regional logistics patterns while making the Fergana Valley more significant as a transit economic center in the long run. (Asian Development Bank, 2022)

However, the project faces multiple risks and constraints, together with its positive aspects. Firstly, the project faces political and economic instability risks because Kyrgyzstan has shown a pattern of interrupted agreements and delayed project timelines, as well as position changes. The project faces a substantial risk of delayed and uncoordinated execution because of these factors. (Reuters, 2024)

Secondly, two major risks stem from its growing dependence on China through financial support and technical planning assistance. The possibility of providing a loan from Eximbank China is

already being discussed, which will increase the debt burden, especially for Kyrgyzstan. The use of Chinese standards, EPC models, and personnel decisions may lead to a limitation of national sovereignty in key aspects of project management. (Azimqulov, 2025)

In addition, the environmental and social risks described earlier remain lack of environmental assessment, potential displacement, and difficulties in monitoring sustainable design. If these issues are not addressed early, they could trigger protests and conflicts like those seen in other BRI countries.

Comparison with the Angren-Pap project: lessons and differences

Unlike the already implemented Angren-Pap project, CKU has a more pronounced transnational nature. If in the case of Angren-Pap, Uzbekistan acted as a dominant actor and independently dictated the terms of interaction (up to and including the refusal to attract Chinese labor), then CKU requires complex coalition coordination between three countries with different levels of political stability and institutional maturity.

The Angren-Pap experience shows that balanced participation of national structures, sustainable monitoring, and flexibility of the institutional model are key conditions for successful implementation. These lessons can also be applied to CKU, provided there is political will, technical preparation, and active participation of civil society.

The CKU project cannot be seen as a purely transport initiative. It is an example of planning through geopolitics, where infrastructure becomes an instrument of political alliances, strategic shifts, and the redefinition of regional architecture. In this logic, infrastructure is not just a means of communication, but a space for struggle for influence, control, and the future of the region.

5.2.3 Navoi Free Economic Zone: Logic of Nodal Development in the Context of the BRI

General information about the project: Free Economic Zone Navoi

The Navoi Free Industrial and Economic Zone (Navoi FIEZ) received its establishment through Presidential Decree No. UP-4059 on December 2, 2008, to boost Navoi region development and establish export-oriented industries while creating favorable investment conditions in the area. (Ahn, Juraev, & Gu, 2024)

The FIEZ operates from Navoi City, which serves as a major industrial and logistics hub in Central Uzbekistan. The strategic position of the zone enables international trade because it sits near the Navoi International Airport, which Korean Air helped modernize, and benefits from access to transportation routes linking Uzbekistan to China and Iran, and Europe. (Ahn, Juraev, & Gu, 2024)

The zone started with 564 hectares of land but received additional industrial areas during its development phase. The FIEZ residents receive tax and customs advantages through its legal framework, which grants them income tax and VAT and land tax exemptions, and state extra-budgetary fund payment reductions for up to 10 years based on their investment scale. (Ahn, Juraev, & Gu, 2024)

The key participants in the project are:

The Government of the Republic of Uzbekistan maintains control over legal matters while offering advantages to investors.

The Ministry of Investment, Industry, and Trade functions as the main authority for selecting and backing investment projects.

Navoi Regional Administration - ensures local coordination.

Foreign investors, including Chinese companies such as China CAMC Engineering Co. and others, are investing in the production of building materials, electronics, textiles, and raw material processing. (Tukhtaev, 2022)

Figure 16. Navoi free-economic zone (FEZ)

Source: Open-access image from the Internet.



The project is being implemented through mixed financing: the national budget, funds from international financial institutions, and direct foreign investment. In particular, a significant share of investments is made up of Chinese investments, which are being increased within the framework of the One Belt - One Road initiative. To date, more than 40 joint ventures have been registered with the participation of foreign partners, including those from China, South Korea, Germany, and Russia. (Juraev, Ahn, & Gu, 2025)

The establishment of the Navoi FIEZ was a major step towards integrating Uzbekistan into global economic processes, as well as an example of transferring the Chinese logic of “special zones” to the post-Soviet context, considering local specifics. The zone is considered a platform for industrial development, technology transfer, and the formation of new logistics and production chains in the region. (Juraev, Ahn, & Gu, 2025)

Geoeconomic significance and logic of participation in the BRI

The Navoi Free Economic Zone occupies a key position in the infrastructure and trade architecture of Central Asia, becoming an important node of the BRI Initiative (the BRI). Its geographical location - in the very center of Uzbekistan, close to major highways, railway lines, and an international airport - allows the FEZ to be considered a strategic point of intersection of east-west and north-south routes. (Mirziyoyev, 2019)

Navoi's focus on multimodal logistics makes it a potential core for integration into Chinese land routes, bypassing the Trans-Caspian route and Russia. Within the framework of the BRI initiative, the Chinese side is interested in creating stable logistics hubs through which it will be possible to redirect cargo flows towards Europe and South Asia. The Navoi Free Economic Zone, with its infrastructure capabilities – including an airport, cargo terminals, a technology park, and logistics centers – meets these requirements. (Mirziyoyev, 2019)

The participation of Chinese companies in the development of the Navoi FEZ includes both investments in production (e.g., chemical, textile, and construction industries) and joint design of transport solutions. The Chinese logic of developing "hub zones" – with an emphasis on transport connectivity, exports, and minimization of transaction costs – has been largely transferred to the Navoi model, which is becoming an example of "localization of Chinese experience" in the Uzbek context. ((Dentons, 2019)

Infrastructure facilities that form the framework of the zone (including modern logistics terminals, gas stations, power grids, and highways) were built with the participation of Chinese contractors or with the support of Chinese investors. This made it possible to accelerate the implementation of several key clusters and make them competitive in the regional economy. It is also important to note that Navoi is considered an integral element of a single chain: in conjunction with other industrial hubs (Angren, Jizzakh, Termez), it strengthens the Uzbek transport geography as a transit corridor between China and the countries of the Middle East, the Persian Gulf, and Europe (Dentons, 2019).

From a geo-economic perspective, the development of Navoi as a BRI hub serves three strategic objectives:(Dentons, 2019)

1. Regional integration – strengthening the logistics connectivity of Central Asia.
2. Diversification of trade flows – reducing dependence on Russian and Western routes.
3. Deepening ties with China – not only through transport, but also through joint production and technological chains.

Thus, the significance of the Navoi FEZ goes beyond local industrial development and becomes part of the transnational framework of the BRI initiative. It functions as a strategic element of the new infrastructure geography, where the economic logic of the Chinese "belt" is adapted to the tasks and priorities of Uzbekistan.

Spatial planning and urban development

The development of the Navoi free economic zone has significantly influenced the logic of spatial planning of both the city of Navoi itself and the adjacent territories. Initially focused on the development of industrial production, the zone gradually became the core of the new urban and infrastructural reformatting of the region. Spatial development here has acquired the features of cluster growth, where new residential, logistics, and service structures are formed around industrial facilities. (Eurasian Research Institute, 2020)

Firstly, the structure of the Navoi FEZ itself contributes to the formation of a compact and functionally specialized urban environment. According to research, new settlements, residential areas, and logistics terminals designed to service both industrial facilities and the growing flow of labor have begun to actively form near the zone. This requires urban development authorities to adapt master plans, revise transport infrastructure, and connect additional utility networks. (Eurasian Research Institute, 2020)

Secondly, the increase in industrial and logistics activity has created a need for the redevelopment of some urban areas. A trend towards reorientation of land zoning is emerging: areas previously designated for agricultural or residential use are increasingly being reclassified for industrial or logistics development. This is accompanied by an increase in the density of development and a shift in priorities towards export-oriented production. (Eurasian Research Institute, 2020)

The third important aspect was the formation of a new logic of spatial connectivity. The development of transport infrastructure – primarily the modernization of Navoi airport, the expansion of cargo terminals, and the improvement of road links with other regions – transformed Navoi into a regional logistics hub. This, in turn, increased the city's importance in the national settlement system, making it attractive for labor migration and the placement of new production and trade facilities.

However, such intensive development is accompanied by a number of challenges. There is a risk of unbalanced growth – when infrastructure fails to keep up with industrial expansion, which leads to overloading of urban networks, deterioration of environmental quality, and growth of social fragmentation. In addition, the orientation of planning mainly towards the interests of investors and exports leaves in the shadows the tasks of comprehensive improvement and sustainable development of the urban environment. (China-Central Asia Economic Cooperation Center, 2021)

As a result, the Navoi FEZ functions as a main catalyst for urban development in the region because it enhances both transportation links and industrial capabilities. However, the transformation needs a structured spatial planning system that addresses economic needs and social requirements, and environmental sustainability.

Institutional Mechanisms and Chinese Participation

The Navoi Free Economic Zone is not only an industrial and logistics cluster, but also a kind of institutional laboratory where new models of interaction between the state and private (including foreign) capital are assessed. In the context of China's growing participation in the regional economy, the institutional configuration of the NFEZ demonstrates elements of hybrid management, combining national priorities with the logic of transnational investment. (China-Central Asia Economic Cooperation Center, 2021)

Figure 17. Navoi Free Economic Zone (FEZ).

Source: Open-access image from the Internet.



Chinese investments in the Navoi FEZ are implemented primarily through mechanisms of direct participation of Chinese companies in projects under EPC contracts (engineering, procurement, construction), joint ventures (JV), and in the format of a strategic partnership with government agencies of Uzbekistan. One of the key investors is the China National Building Material Corporation, which has initiated several projects in the field of production of building materials, logistics, and energy. (Dentons, 2019)

An important feature is that the institutional conditions in the NFEZ have been deliberately adapted to the standards expected by international investors, especially Chinese ones. This includes simplified procedures for registering enterprises, accelerated obtaining permits, preferential taxation, and guarantees of profit repatriation. Such conditions largely create a “special legal regime” that differs from the national one, which enhances the autonomy of the SEZ and makes it more attractive to external actors. (Dentons, 2019)

At the same time, there is a growing institutional dependence on the logic of Chinese standards, both technical and managerial. In some projects, the Chinese side not only finances construction but also determines architectural and technological parameters and acts as the operator of logistics processes. This leads to the fact that design and management standards are increasingly adjusted to the interests of the external partner, rather than being formed exclusively from national considerations. (Summers, 2016)

On the other hand, the Uzbek leadership, aware of the potential risks of asymmetric dependence, is trying to balance interests. An example is the initiative to ensure the dominance of local workers in project implementation, like what happened during the construction of the Angren-Pap line. For several projects in Navoi, China initially insisted on attracting its labor force, but the

Uzbek side insisted on the priority use of local resources, which allowed strengthening the domestic labor market and limiting the growth of external dependence. (Summers, 2016)

Thus, the institutional model of NFEZ is built on the logic of compromise: on the one hand, maximum openness to international investors (especially Chinese), on the other, maintaining a certain level of national control and political subjectivity. This makes Navoi FEZ a clear example of hybrid governance, typical for states with limited sovereignty in the context of global redistribution of infrastructure flows.

Environmental, social, and infrastructure challenges

The rapid development of the Navoi Free Economic Zone (NFEZ), supported by external investments and integrated into the regional corridors of the BRI initiative, is accompanied not only by economic growth, but also by several challenges - primarily environmental and infrastructural, as well as those related to the social development of the urban environment.

From an environmental perspective, the main problem is the high concentration of industrial production in a limited area, which puts pressure on the environment. According to estimates, the development of the zone is associated with an increase in industrial emissions, an increase in the load on water resources, and potential pollution of the soil and atmosphere. Adjacent areas are particularly vulnerable, where industrial facilities are being built without sufficient preliminary environmental assessment. As emphasized in the analytical study, current environmental regulations in several cases give way to the investment logic of "accelerated growth" and short-term profitability. (Hong & Sun, 2018)

The city of Navoi, where the FEZ is found, is also experiencing pressure on social and communal infrastructure. The influx of workers and specialists, as well as the need to service new industrial facilities, creates a shortage of housing, transport links, schools, and medical institutions. In this context, cases of accelerated development of industrial facilities with lagging social infrastructure have already been recorded, which creates an uneven and functionally disjointed urban space. (Hong & Sun, 2018)

The problem remains the insufficient integration of strategic spatial planning with the actual rates of economic development of the territory. Often, projects are implemented pointwise, outside the unified general logic of the city's development. This leads to the fragmentation of the urban environment, the complication of transport links, and the increase of functional overloads in certain areas. (Hillman, 2018)

Moreover, despite the declared focus on sustainable development, environmental control mechanisms in the NFEZ remain weakly institutionalized. The absence of mandatory strategic environmental assessments, insufficient transparency of procedures, and a shortage of professional personnel in the field of environmental monitoring make control over industrial growth formalistic. (Azimqulov, 2025)

Social consequences cannot be ignored either. The development of SEZs has an impact on land relations: there have been cases of land plots being redistributed without full public agreement, which causes discontent among local communities and can provoke social tensions. In addition, a sizable part of jobs is concentrated in low-paid sectors, which does not always correspond to the rhetoric of “inclusive growth” promoted in strategic documents. (Azimqulov, 2025)

Thus, despite the economic attractiveness and strategic importance of the NFEZ, the project faces a number of challenges typical of spatial development in conditions of limited sovereignty. Environmental, social, and infrastructural aspects are often subordinated to the logic of attracting investment, which creates risks of unbalanced growth and requires the introduction of more comprehensive mechanisms of spatial and sustainable planning.

Project assessment: potential and risks

The Navoi Free Economic Zone (NFEZ) possibly represents Uzbekistan's strategic initiative to join worldwide value chains through foreign direct investment mainly from Chinese sources. The NFEZ serves as a central logistics center for Central Asia, which functions as a processing and distribution and industrial manufacturing base. However, along with its obvious achievements, the project has a set of risks and limitations that deserve critical analysis.

The potential of NFEZ can be manifested in several directions. Firstly, the zone has become an entry point for Chinese capital into manufacturing sectors, including electronics, mechanical engineering, pharmaceuticals, and raw material processing. Secondly, the presence of an international airport and developed transport infrastructure may allow for the formation of multimodal logistics schemes, reducing transaction costs and increasing the country's export potential. Thirdly, the zone can stimulate the localization of industrial production, create jobs, and promote the growth of related industries. (Hong & Sun, 2018)

However, the project's implementation can be accompanied by serious risks. Firstly, the economic efficiency of NFEZ largely depends on the stability of Chinese investments, which makes it vulnerable to foreign policy changes and possible adjustments to the BRI strategy. Secondly, the project shows features of hybrid governance – a combination of formal state control with the actual priority of investors' interests, which sometimes leads to a weakening of

institutional transparency and a decrease in the role of local communities in decision-making. (Hong & Sun, 2018)

In addition, the long-term sustainability of the project raises questions. The lack of a systematic approach to environmental monitoring, overloaded urban infrastructure, and social stratification as a result of uneven distribution of benefits - all this can lead to fragmentation of the urban environment and a decrease in social inclusiveness. Such challenges are typical for projects implemented in the BRI logic in countries with limited resources and institutional vulnerability. (Dollar, 2019)

A comparison with the Angren-Pap project shows the difference in scale and approach. If the railway line were an infrastructure link with an emphasis on transit and territorial connectivity, then NFEZ is an attempt to create a point of industrial growth in the logic of cluster development. However, in both cases, there is a similar logic: the project is being implemented in conditions of high external involvement and requires the adaptation of local practices to the global interests of investors.

Thus, NFEZ can be considered a case of spatial development in the context of infrastructure globalization. It shows both the potential for inclusion in international economic processes and the risks of one-sided dependence on external capital, governance fragmentation, and unbalanced growth. The long-term success of the project will depend on the state's ability to integrate the zone into national sustainable development strategies, set up effective control mechanisms, and ensure the participation of all stakeholders, from investors to local communities.

5.3 Integration of the BRI Initiative into national, regional, and local spatial planning strategies of Uzbekistan

The BRI Initiative (the BRI) in Uzbekistan is not just an infrastructure project but also can be a factor influencing the logic of spatial planning at various levels. The combination of national interests, regional priorities, and local practices creates a unique model of hybrid multi-level governance, where external initiatives transform the traditional system of spatial policy.

National level: Strategic Coherence

The BRI Initiative's integration into Uzbekistan's spatial planning serves as a prime example of how domestic strategies unite with foreign infrastructure development opportunities. Shavkat Mirziyoyev initiated reforms that focused on building modern transportation systems and energy networks while making Uzbekistan more attractive to investors and building an export-driven economy. The state program "Uzbekistan 2030," along with multiple sectoral strategies, including the State Industrialization Program and the Energy Security Strategy, shows these national priorities.

The BRI serves as a national acceleration tool for achieving long-term targets according to the current national perspective. BRI integration into national plans happens through established procedures according to experience. The implementation of extensive infrastructure projects becomes possible through external funding from loans and investments, which would otherwise need decades of domestic funding.

An example is the Angren-Pap railway, which combines domestic financing and international borrowing, including loans from Chinese banks and the World Bank. On the other hand, the development of free economic zones like Navoi was made possible precisely by the creation of a special legal and tax regime for foreign investors, primarily from China. (China Railway Tunnel Group, 2025)

The national economic policy integrates external projects into its institutional framework, which speeds up the execution of modernization initiatives. The integration process includes institutional aspects that show the concept of "limited sovereignty." The state maintains its authority to make strategic choices while serving as the main funding organization for projects. The engineering solutions and standards, and project timelines that external actors, particularly Chinese contractors, decide on become the dominant factors in practice.

The Chinese company China Railway Tunnel Group handled the most complicated technical aspects of Kamchik Pass tunnel construction under the supervision of Uzbek authorities, who

managed funding and coordination. The project runs under a hybrid governance system because domestic interests must share space with global infrastructure connectivity principles through formal autonomy and actual dependence on foreign technology and funding. (China Railway Tunnel Group, 2025)

The integration of national aims with the BRI brings multiple benefits to the country. The construction of transport corridors under the BRI program enabled Uzbekistan to decrease transportation expenses while shortening delivery times and setting up continuous routes between essential areas. The project enabled the Fergana Valley to connect better with central and western regions of the country while enhancing its export capabilities in international markets. The foreign contractors transferred their technological and organizational ability to national specialists who learned complex engineering methods and contemporary project management techniques. (Ilkhomova & Khabibiy, 2024)

Finally, the country achieved geo-economic status as a Eurasian transit hub through its integration into international transport networks, which matches the strategic goals of the Uzbekistan 2030 program. However, the implementation of the BRI national policy through the BRI framework creates multiple conflicting elements.

First, the implementation of external standards and procedures creates ongoing dependent risks for the country. The earlier chapters have shown that streamlining administrative procedures for faster project completion results in reduced environmental assessment quality and less transparent land distribution, and decreased local community involvement in decision-making processes. (Ilkhomova & Khabibiy, 2024)

Second, the focus on developing transit and export capabilities leads to a national priority shift that serves external interests instead of domestic goals, including regional development and social infrastructure, and environmental protection. Third, the major projects' environmental and social effects took a backseat during the Angren-Pap line construction because of soil erosion and water contamination, and forced population relocation occurred, while compensation programs did not provide adequate support to affected families. (World Bank, 2024)

Thus, the national policy of Uzbekistan reveals two opposing aspects of its BRI integration approach. The strategy serves as a logical approach that enables Uzbekistan to use global infrastructure projects to speed up its modernization process and enhance its geo-economic position. The integration of national and external priorities through institutional changes leads to fundamental shifts in how spatial development governance is used.

Regional level: formation of “nodal” growth points

The BRI Initiative can show its regional impact through modified territorial development priorities and economic activity shifts between Uzbekistan's different regions. The BRI creates its effects at this level through regional plan adjustments and city functional reorganization, and economic and transport hub development. The economic growth accelerates in transportation route areas, which creates new industrial and logistics, and innovation clusters. The economic transformation of individual cities and districts into growth points enhances their national economic value. (Ilkhomova & Khabibiy, 2024)

Concentration exists at both economic and institutional levels. The hybrid governance model appears because regional authorities need to work closely with central authorities while following international investor requirements. Several regions changed their development plans to include infrastructure projects and industrial parks, which resulted in faster investment attraction and international construction and operational standard compliance. The system runs through a dynamic process that unites regional development requirements with global infrastructure planning needs for simultaneous decision-making.

The BRI integration mechanisms at the regional level include resource redistribution, land adaptation, and urban planning legislation to accommodate major infrastructure and industrial projects, industrial projects and special economic zones, and international design and management standards. The implemented measures drive faster modernization of regional infrastructure while making regions more attractive to investors and boosting their national economic competitiveness. The establishment of new development centers generates a "locomotive" effect that drives economic growth in surrounding areas through infrastructure development and service expansion. (Tekir, 2025)

At the same time, the focus on particular areas for resource allocation and attention leads to unequal development between different regions. The regions that do not receive investment in key transport and development corridors will continue to stay outside the main development path, which will worsen economic and social inequalities. The development gap between modernizing areas and non-developing areas becomes clear through infrastructure development, job market, and investment opportunities, which create active growth centers and stagnant periphery areas. The regional implementation of the BRI may need to achieve two goals by promoting growth centers and developing all areas of the territory at a similar pace. (The Diplomat, 2023)

In this case, the theoretical framework shows how multi-level governance runs through limited sovereignty principles. The formal authority of regional authorities stays intact, but they must adapt their decisions to both foreign investment patterns and worldwide infrastructure systems. The new patterns of public-private sector collaboration have appeared because of the BRI, which also speeds up decision-making for technological standards and regional plans now follow national strategies and worldwide transportation networks. BRI drives institutional and spatial transformations at the regional level, which reshape territorial structures and urban growth patterns through indirect national policy influence to produce enduring economic and structural impacts across the entire country. (The Diplomat, 2023)

Local level: transformation of urban planning and territorial management practices

At the local level, the BRI Initiative appears to have an impact not only through large-scale infrastructure projects, but also through the gradual transformation of everyday urban planning and territorial management practices. It is here, in direct contact with specific projects, that the BRI can have its most tangible impact on the structure, pace, and principles of urban development.

Cities such as Navoi, Andijan, Jizzakh, Urgut, and, especially, Tashkent are becoming experimental sites of sorts, where urban planning decisions are increasingly being made with an eye on investment flows coming from China. For example, a project to expand the Free Industrial Economic Zone (FIEZ) is being implemented in Navoi, where Chinese companies are taking part in the construction of production facilities and logistics infrastructure. The Jizzakh industrial cluster is also being formed with the direct participation of Chinese investors, where enterprises producing electronics and building materials are being created. In Urgut, the Chinese company China CAMC Engineering is taking part in the modernization of industrial zones, including by introducing water and energy supply systems oriented towards export capacities. (Eurasian Research Institute, 2024)

In Tashkent, more structural transformations can be seen: the reconstruction project of the Sergel station as part of the expansion of rail links is being implemented with the participation of Chinese engineers and technologies. In addition, a “smart” logistics center is being built in the capital’s Yangi Hayot district, adapted to digital solutions proposed by Chinese partners. Here, we can see not only the direct participation of Chinese contractors and companies, but also the hidden adaptation of Chinese design approaches - such as compact zoning, high-density development, accelerated implementation times, and a technocratic style of architectural thinking, where functionality and productivity prevail over cultural or social aspects of the environment. (Tashkent Times, 2025)

The BRI's mechanisms of influence at the local level include the redistribution of land for industrial and logistics facilities and the implementation of modern engineering and transport infrastructure systems. At the governance level, local authorities are forced to operate within a hybrid model: their decisions combine internal priorities with the demands of external investors. Local governments, being the link between the central government and foreign investors, are gradually changing their administrative and regulatory practices. This is especially true for land allocation and re-registration procedures, urban planning regulations, and environmental control standards.

For example, during the construction of the Angren-Pap high-speed railway, financed with the participation of Chinese credit lines, there were cases of simplifying the procedures for obtaining permits for the seizure of lands that were previously part of protected natural areas. Also, when implementing logistics projects in the Fergana Valley, local authorities often deviate from general plans to adapt zoning to the requirements of logistics operators. (Eurasian Research Institute, 2024)

Such changes can be explained by the need to “not miss out” on investment, but in the long term, they can undermine the principles of sustainable planning. In the absence of a systematic assessment of social and environmental impacts, the risk of the emergence of a spatially fragmented urban environment can increase, where enclaves of infrastructure and industrial facilities become a priority, rather than the balanced development of the entire urban fabric.

Particular attention is drawn to the issue of institutional sustainability of the ongoing changes. As a rule, reforms are carried out in a targeted manner, within the framework of a specific project, without being accompanied by a systemic strengthening of local management capacity. This leads to several problems: firstly, the fragmentation of the urban environment increases, both physical and social; secondly, the risks of environmental violations increase due to insufficient control; thirdly, dependence on an external actor increase, which limits the autonomy of local authorities.

Thus, in some regions, there are cases where technical supervision functions are transferred to contractors rather than independent institutions, which reduces the transparency and accountability of processes. (Ilkhomova & Khabibiy, 2024)

The contradiction between the declared goals of sustainable local development and actual practice is also clear in how the function of cities is interpreted. Increasingly, the priority is not meeting the needs of local communities but creating corridors that serve the interests of transit, export, and international trade. Thus, local planning gets a dual character. On the one hand, it

stays formally oriented towards the development of the urban environment and population; on the other, it is increasingly subordinated to the tasks of geo-economic efficiency.

It is important to note that this situation calls into question the agency of local administrations. In conditions where pressure from above (in the person of central authorities) is combined with investor expectations, local authorities are often forced to act in a logic of compromise.

Thus, the BRI creates effects that extend past physical infrastructure development at local sites. The BRI transforms decision-making processes and governance systems and external actor relationships. The question is not only what projects are implemented, but also how this changes the architecture of urban governance, redistributes powers, and redefines the values underlying urban development policy.

Chapter 6: Discussions and Conclusions

Analysis of Specific Hypotheses

The study's results paint a complex and ambiguous picture of the BRI Initiative's impact on spatial planning in Uzbekistan. Overall, it can be argued that the BRI is a powerful factor in transforming both practical territorial development priorities and institutional spatial management practices, but at the same time, this impact is mixed, combining modernization opportunities with risks associated with a partial loss of effective decision-making autonomy.

Hypothesis 1 proposed that projects under the BRI Initiative would change traditional approaches to spatial governance in Central Asia by strengthening international participation in planning processes. The analysis largely confirms this hypothesis but reveals that the nature of these changes is more institutional and coordinative than legal.

Primarily, the implementation of the BRI projects is truly transforming traditional spatial governance mechanisms, previously based on centralized national strategies and vertical decision-making structures. Instead, we are seeing a shift toward multi-level governance, where national, regional, and transnational actors, such as Chinese investment institutions, international contractors, consulting and engineering companies, interact within a single planning space.

However, this does not mean a loss of governance sovereignty. Rather, it stands for an expansion of the planning area, where international participation becomes an additional layer of influence rather than a direct replacement for national institutions. This transformation is leading to the emergence of hybrid forms of spatial governance that combine national priorities with the logic of international investment and the requirements of infrastructure compatibility.

Hypothesis 2 suggested that the BRI partially limits national sovereignty, particularly in the area of infrastructure planning and resource allocation. Our analysis shows that the issue of limiting national sovereignty in the context of Uzbekistan's participation in the BRI is complex and multifaceted.

On the one hand, the BRI projects are indeed accompanied by changes in decision-making architecture in spatial planning. For example, the presence of large external investors and credit institutions (in particular, Chinese banks and corporations) increases national authorities' dependence on external sources of funding and technology, partially shifting the locus of control over infrastructure priorities. In this sense, the hypothesis is confirmed; elements of limited

sovereignty are indeed manifested through financial and contractual mechanisms; however, the analysis also shows that this limitation is not direct.

The formal framework of public governance, including the project approval system, the legal framework, and approval procedures, remains under the control of national institutions. Thus, the impact of the BRI manifests itself more in the form of structural dependence than in the loss of authority. The state keeps legal autonomy, but its decision space is narrowed by the need to consider the interests of external partners, creditors, and China's geoeconomic priorities.

This is particularly noticeable in resource allocation: participation in the BRI leads to the concentration of financial flows in sectors linked to international transport corridors, energy networks, and logistics hubs. This creates an asymmetry between "globalized" regions and the rest of the country and also makes planning decisions dependent on the terms of international agreements. However, this dependence is offset by increased institutional literacy and the Uzbek government's efforts to integrate the BRI projects into its own long-term strategies, primarily through national spatial development programs and the creation of legal filters for project choice.

Hypothesis 3, which says that Uzbekistan's participation in the BRI initiative requires a revision of national priorities in the field of spatial planning in accordance with international obligations, is confirmed, relevant, and partially valid.

The BRI initiative has triggered a review of spatial development priorities because countries are required to modify their national strategies to fulfill international standards and logistics, and investment requirements. The BRI project participation of Uzbekistan has caused national planning documents to focus more on international trade connections and export market access instead of domestic equilibrium and equal territorial growth. The national planning system of Uzbekistan now incorporates international terminology from the BRI into its internal documents, which includes "logistics hubs", "transit corridors", "regional integration", and others.

However, the process of national priority revision in Uzbekistan is not a consequence of external pressure but rather a process of adaptation, using international commitments to create its new strategic direction. The BRI serves as a tool for Uzbekistan to transform its logistics and infrastructure networks while digitalizing planning operations and implementing sustainable development principles.

Thus, external commitments create dual effects on domestic development of territorial planning by establishing performance standards and generating new possibilities for national change. But the main risk factor stems from losing priority on essential domestic targets, which include regional integration, rural development, and social sustainability maintenance in favor of

strengthening international commitments for engaging in transnational chains, which leads to exacerbating spatial inequality.

Hypothesis 4 stated that the BRI creates opportunities for infrastructure modernization but is associated with risks of long-term dependence on external investors and environmental impacts. The research findings confirm this research hypothesis. The BRI project participation by Uzbekistan creates fresh opportunities to modernize its infrastructure base through transportation, energy, and logistics development.

The China-Kyrgyzstan-Uzbekistan railway corridor and highway modernization, free economic zone development, and industrial park construction work together to boost Uzbekistan's spatial integration speed and decrease internal expenses while strengthening its transit capabilities.

But this modernization is asymmetrical. Most projects are initiated and financed by external actors: Chinese state-owned banks, corporations, and consortia, which creates a structural dependence on external sources of capital and technology. This dependence manifests itself not so much in direct management by investors as in long-term obligations related to loan repayment, infrastructure maintenance, and contractual terms securing the participation of foreign companies in project management.

In addition to economic risks, the study also identified an environmental dimension to dependence. In a context where the priority is the speed of implementation and scale of investment, environmental assessment of projects often becomes secondary. However, the BRI cannot be reduced just due to security concerns because it holds significant potential for development.

The BRI initiative serves as a modernization driver for Uzbekistan because it enables digital technology implementation in urban planning and improves transportation safety, specialist training, logistics, and manufacturing capabilities. The main challenge for Uzbekistan involves successfully integrating external funding into its own development strategy while reducing reliance through multiple alliances, open contracting systems, and the development of national expertise.

Hypothesis 5 predicted that Uzbekistan would succeed in adapting external influences through its adoption of international standards that support national interests and sustainable development principles.

The research findings confirm this hypothesis because Uzbekistan's ability to adapt depends on its institutional system flexibility and its commitment to merging international methods with

national strategic goals. The BRI initiative and Uzbekistan's work with ADB, UN-Habitat, and World Bank have established a path for spatial management modernization through the implementation of digitalization, GIS technologies, and sustainable urban development principles.

At the same time, Uzbekistan works to maintain its unique planning system framework through the process of adapting international standards to domestic social and institutional requirements. The strategic documents from recent years show efforts to link international integration targets with domestic needs for social stability, regional development, and environmental protection. The management culture has started to evolve through a transition from a top-down approach to a process that enables networked coordination between state entities, business sectors, and expert communities.

However, the process of adopting international standards creates multiple obstacles that produce conflicting results. First, the institutional gap between regulatory frameworks and their implementation practices continues to exist because strategic documents often do not translate into actual coordination mechanisms and remain formal. Second, the implementation of external approaches demands substantial human and technological assets, which the current regional capacity does not always support.

And third, the combination of economic openness and national interests often proves fragile when external forces and investment rivalry intensify; as a result, sustainable development goals become vulnerable to abandonment.

Nevertheless, the study indicates that Uzbekistan develops its adaptive capacity at a gradual pace. The state demonstrates its commitment to national goal transformation through "Tashkent 2045" and other long-term strategies, which evaluate global patterns while preserving Uzbekistan's distinct identity and independent decision-making power. The successful modernization of spatial planning systems depends on how well countries balance their international relations with their ability to withstand domestic challenges.

Analysis of the Main Hypothesis:

Statement: The BRI Initiative (the BRI) is having a significant impact on spatial planning in Central Asian countries, including Uzbekistan, leading to changes in national development strategies and potentially limiting certain aspects of national sovereignty.

The results from testing individual hypotheses enable us to verify the complete but not definitive version of the main hypothesis. The study demonstrates that the BRI's impact on spatial planning

in Uzbekistan is systemic, multilayered, and manifests itself not so much through direct administrative mechanisms as through structural and institutional transformations.

First, the analysis showed that participation in the BRI is profoundly changing traditional approaches to spatial governance. International participation in planning processes is increasing, and the range of actors is expanding, from national agencies to foreign corporations and financial institutions. Planning is no longer a purely domestic regulatory tool but is becoming an element of international coordination, where decisions are increasingly being made with consideration of regional and global priorities.

Secondly, a shift in the priorities of national spatial policy has been confirmed. Development logic is increasingly subordinated to the objectives of transit integration and export orientation, reflecting the shift from the concept of "internal balance" to the concept of "external connectivity." This shift arises because of the state's strategic choice to integrate into global trade and logistics networks. However, such reorientation carries the risk of increasing territorial asymmetry and dependence on external flows.

Third, the BRI's impact is manifested in the adaptation of the institutional structure: the national planning system is beginning to integrate international standards, assessment mechanisms, and digital tools. This contributes to the increased professionalization and technological advancement of the sector, but is accompanied by increased external dependence on investments, expertise, and policy decisions from major partners. Thus, the processes of modernization and dependence are intertwined: infrastructural capabilities are accompanied by institutional vulnerabilities.

At the same time, the analysis showed that the initiative's impact does not directly limit sovereignty. Government bodies retain control over formal planning frameworks, legal regulations, and strategic documents. However, sovereignty becomes functionally hybrid: decisions are formally made domestically, but in reality, depend on international partners, investors, and transnational commitments. This creates a new form of spatial governance, "shared sovereignty," in which national interests are realized through multi-level partnerships.

Ultimately, the main hypothesis is partially confirmed, but with important clarification: this is not a loss, but a transformation of sovereignty - a transition from a centralized governance model to a networked one, where international and national interests interact, compete, and mutually adapt. The BRI acts not simply as an external factor, but as a catalyst for modernization, forcing national spatial planning systems to seek a balance between integration and autonomy, between economic pragmatism and strategic sustainability.

Key findings of the study:

The research established that Uzbekistan's spatial planning system underwent major institutional and territorial changes before and during the BRI influence. The analysis shows that the modernization process of infrastructure has triggered fundamental changes in governance structures, which affect how national control interacts with international connections.

Historically, Uzbekistan's spatial planning system was formed within the framework of the Soviet centralized model, focused on the distribution of productive forces. The system experienced institutional fragmentation and strategic management weaknesses after gaining independence. The system started its institutionalization process through two major legislative steps, which included the Law "On Architectural and Urban Development Activity" (1999) and the Urban Development Code (2002) to establish modern system foundations. However, the system shows signs of unfinished decentralization because regional entities maintain restricted autonomy while needing central authority approval for their decisions.

The analysis revealed that the current three-tier system, which includes national, regional, and local levels, is likely to operate with unequal distribution of power. The national level creates strategic guidelines, which regional levels transform to match local needs, and local levels execute but lack sufficient funding and control. The main problems remain insufficient digitalization, especially outside large cities, limited public participation in planning processes, institutional fragmentation and overlapping functions, the dominance of investor interests over public priorities, and a shortage of qualified personnel in regional and local government bodies. These factors reduce the adaptability and resilience of the system in the face of growing international influence.

The Angren-Pap railway and China-Kyrgyzstan-Uzbekistan project and Navoi Free Economic Zone serve as examples to show how the BRI projects have changed spatial priorities from maintaining internal territorial stability to creating export-driven growth through international transportation networks. Thus, the new spatial development pattern now uses international trade and transportation network participation as a primary element to determine territorial changes.

The analysis shows that the implementation of the BRI initiative may be accompanied by an informal restriction of national autonomy in territorial governance. Although legally planning authority remains with national authorities, strategic priorities are increasingly determined by the logic of international agreements and the interests of large external investors. This is particularly noticeable at the regional level, where authorities often adapt to external project frameworks rather than formulate their own spatial strategies. Uzbekistan works to adopt international spatial

planning standards through digitalization and GIS technology implementation, and international expert participation in the Tashkent 2045 Master Plan development.

However, the implementation of sustainable development principles faces challenges because of institutional resistance and poor coordination between government levels, and insufficient practical application. As a result, the country maintains a dual approach in its spatial policy because it wants to protect its sovereignty while needing to respond to international initiatives and economic forces from abroad.

Practical Significance of the Study:

The results of this study have both theoretical and practical value. They can be used by various actors involved in spatial planning and territorial development in Uzbekistan.

First, the findings are of interest to national strategic and urban development authorities, which face the need to align the interests of the state, investors, and local communities. The developed analytical approaches allow for a more accurate assessment of the impact of foreign investment on territorial priorities and the development of tools for balancing investment attractiveness and sustainable development.

For local authorities and city administrations, this research can serve as a guide in building coordination between planning levels and increasing public engagement in urban planning decisions. Understanding how international projects are transforming local governance practices helps develop more transparent and inclusive spatial governance mechanisms.

In a broader international context, the results of this study are of interest to international organizations (ADB, UN-Habitat, the World Bank, and others) implementing infrastructure initiatives in countries with limited resources and high institutional dependence.

The study could contribute to creating an ethical framework that balances donor and investor relationships with host countries through economic and sociocultural development considerations of territorial development.

Finally, the research findings from this study provide scientific and educational institutions with empirical evidence to study how globalization and Eurasian geopolitical changes affect spatial policy development. The research adds new knowledge about how global programs interact with national planning systems, which enables researchers to conduct additional comparative studies.

The research findings create dual value because they provide short-term solutions and establish foundations for developing fair and environmentally friendly spatial development strategies in developing nations.

Limitations of the Study:

The research contains various restrictions that stem from both experimental approaches and environmental conditions. The study results maintain their importance, although methodological and contextual constraints affect their analysis and point toward additional research opportunities.

Firstly, the research foundation of this study remained restricted to empirical evidence. The study used official documents together with case studies and expert interview data as its main sources. However, access to a range of public and confidential data was difficult because the subject matter remained classified, and organizations failed to provide clear information. As a result, these limitations during the study might have created an imbalance that potentially affected the research's ability to represent diverse local perspectives.

Secondly, the subject of research contains elements that make it sensitive to geopolitical factors. The analysis of China's and the BRI's effects on domestic political processes and territorial development requires examination of national sovereignty matters. The research findings might be incomplete because public sources lack full disclosure, and interview participants showed reserve during their responses.

Third, the study period was short because it occurred during a time when international relations remained unstable. The spatial effects of the BRI projects in Uzbekistan remain uncertain because these projects exist in various stages of development and discussion.

Finally, the research employed qualitative analytical techniques, case studies and interviews to detect structural patterns yet lacked quantitative proof through spatial statistics or GIS analysis. This creates a need for further development of combined approaches that will allow for the measurement of the scale and precise parameters of the BRI's impact on the planning system.

The research employed qualitative analytical techniques and case studies, and interviews to detect structural patterns, yet lacked quantitative proof through spatial statistics or GIS analysis.

The research provides a detailed understanding of institutional and territorial changes that occur during Uzbekistan's BRI Initiative participation despite its methodological constraints. The study maintains its importance because it establishes essential groundwork for creating better research methods, which will produce more precise and critical findings in the future.

General recommendations for improving spatial policy in Uzbekistan:

Based on the analysis conducted, several areas can be identified that appear to be the most promising for the further development of Uzbekistan's spatial planning system in the context of growing involvement in transnational infrastructure initiatives.

First, the study's findings highlight the need for stronger coordination between levels of government. The present mismatch between national and local organizational structures hinders the successful execution of strategic objectives. The solution requires developing sustainable mechanisms for interaction that enable center-region dialogue while maintaining plan and strategy alignment through digital platforms that link master plans with investment projects and government programs.

The second focus area involves building up local institutional strength. The regional structures need specific initiatives to build expert communities, professional development programs, and analytical units because they lack funds and qualified staff. This will allow for the formation of more independent and competent decision-making centers at the local level.

Particular attention should be paid to the institutionalization of public participation in the planning process. The current public engagement system operates independently from each other, which diminishes both the validity and enduring nature of urban planning choices. The process requires establishing open consultation systems and public hearing events, and digital feedback platforms, which enable citizens to view projects and provide their input.

The fourth area requires countries to achieve an equilibrium between international influence and their domestic national priorities. The BRI Initiative requires special attention to sovereignty and territorial planning independence during its implementation phase. The implementation of pre-assessment procedures for international projects will help countries protect their national strategic and social goals from external interest prioritization.

Finally, the fifth area is strengthening the environmental component of spatial policy. Findings indicate that ecological concerns continue to sit on the fringe of planning dialogues. To move forward, a suite of tools is needed to embed sustainable-development principles into decision-making, particularly in the design of transnational transport and industrial corridors.

Thus, further improvement of Uzbekistan's spatial policy requires a comprehensive approach combining institutional, technological, and social measures aimed at increasing sustainability, transparency, and balance between national and global interests.

Directions for Future Research:

Several research avenues are available, each with the potential to deepen our insight into the mechanisms by which global initiatives drive transformations.

First, a close-up look at infrastructure cases (railway corridors, zones, for instance) should zero in on how institutions are configured, how governance operates, and what spatial repercussions follow.

Secondly, a comparative analysis of the experiences of other Central Asian countries and the BRI participants could be a crucial step. Comparing approaches will help identify differences in the response of national planning systems to external influences and identify resilience factors.

A third area could be studying the transformation of the normative and discursive environment, that is, changes in official rhetoric, strategies, and plans that accompany the implementation of international projects. This will help understand how global ideas and narratives transform state thinking about space.

Finally, the effort to devise tools that evaluate the sustainability of planning under constrained sovereignty carries substantial promise. Constructing a mix of indicators and analytical models will allow for a finer measurement of how national governance systems can flex and respond within a transnational context.

Taking together, these areas provide the foundation for a new research field: the study of spatial policies in countries with developing institutions in a context of global interdependence.

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Appendix A. Interview Guide

Interview questions:

Part 1 Spatial planning in Uzbekistan

1. How effectively are various levels of government (national, regional, and local) coordinated in spatial planning? And what are the main institutional challenges, including transparency, public participation, and long-term strategic planning?
2. What third-party organizations and external actors are involved in spatial planning in Uzbekistan?
3. What are the problems and challenges in spatial planning in Uzbekistan, in your opinion?
4. How do foreign investments, international organizations, and global trends influence Uzbekistan's spatial planning strategies and governance?

Part 2 BRI Influence on Spatial Planning in Uzbekistan

1. What changes have occurred in Uzbekistan's transport system due to BRI projects, such as the modernization of railways and highways? (Follow-up: Has connectivity between cities and regions improved? How has this affected the economic development of border areas?)
2. How has the construction of the China-Kyrgyzstan-Uzbekistan (CKU) railway influenced spatial development and the country's logistics infrastructure? (Follow-up: Which regions have benefited the most? Have regional transport flows changed?)
3. How have BRI projects, such as the CKU railway and logistics hubs, changed approaches to spatial planning and territorial governance? (Follow-up: Have new regulatory mechanisms emerged? Has coordination between various levels of government improved?)
4. What role do Uzbek authorities play in decision-making on BRI projects? (Follow-up: What mechanisms exist to oversee Chinese investments? To what extent are national interests considered in the implementation of infrastructure projects?)
5. How are negotiations with Chinese companies under BRI regulated? (Follow-up: Who are the key actors in this process? How are local community interests taken into account?)

6. What sovereignty risks could arise from attracting Chinese investments into infrastructure? (Follow-up: Are there concerns that BRI projects could lead to debt dependency? How is the balance between national and external interests maintained?)

Social and Environmental Impacts

7. How have BRI projects, such as the CKU railway or energy infrastructure development, affected local communities and land use? (Follow-up: Have there been cases of population displacement? How has access to resources changed in the areas affected?)

8. What environmental risks accompany BRI implementation in Uzbekistan? (Follow-up: What measures are being taken to minimize negative impacts?)

List of respondents:

1. Employee of the Institute for Strategic and Interregional Studies under the President of the Republic of Uzbekistan (ISMS)
2. Employee of the Ministry of Construction and Housing and Public Utilities
3. Employee of State Unitary Enterprise "TashkentboshplanLITI", which is responsible for the development of master plans and urban planning documentation, the design of cottage construction, and the implementation of architectural supervision.
4. Expert sinologist from the University of World Economy and Diplomacy
5. Expert – economist
6. Ecological expert from the State Committee of Ecology

Appendix B. Summary of Interview Findings

Interview №1.

Expert: Employee of the Ministry of Construction and Housing and Public Utilities

Question 1: How effectively are various levels of government (national, regional, and local) coordinated in spatial planning? What key institutional challenges would you highlight, including transparency, public participation, and long-term strategic planning?

Answer: Formally, we have a clear planning hierarchy: strategies and national plans are developed at the national level, regions adapt them to their own conditions, and local authorities are responsible for practical implementation. However, in practice, coordination remains a challenge. Regional plans are not always linked to master plans, and local administrations often act reactively rather than strategically. Public hearings and citizen consultations are held, but they are often perfunctory. This reduces public trust and leads to local conflicts.

Question 2: Which third-party organizations and external actors are involved in spatial planning in Uzbekistan?

Answer: International organizations play a significant role here: the World Bank, the Asian Development Bank, the EBRD, and UN programs. They provide both financial and methodological support, for example, in the implementation of GIS systems and digital cadasters. Furthermore, in recent years, the participation of foreign design consortiums in the development of master plans for large cities has increased, as was the case with the Tashkent Master Plan 2045, which involved architects from Singapore, the UK, and Germany.

Question 3: What problems and challenges in spatial planning do you consider the most critical?

Answer: Firstly, the Soviet legacy, which still shapes many approaches. We operate in a vertical system where decisions are made top-down, without sufficient consideration of local needs. Secondly, the fragmentation of power: there is weak coordination between the national, regional, and local levels. Thirdly, the low level of digitalization—although the implementation of electronic systems is progressing, many districts still use paper archives. It is also worth noting the shortage of young specialists: design institutes are experiencing a talent shortage. And, of course, there is limited public participation and low trust in planning processes.

Question 4: How do foreign investment, international organizations, and global trends influence spatial planning strategies and governance in Uzbekistan?

Answer: The impact here is twofold. On the one hand, the participation of international financial institutions helps implement modern tools, digital maps, environmental assessments, and novel approaches to transportation. On the other hand, it creates a dependence on external priorities.

For example, large infrastructure projects financed under the Belt and Road Initiative often emphasize logistics and industry, while social infrastructure or environmental issues are relegated to the background. Overall, it can be said that international participation accelerates modernization but simultaneously intensifies the debate about the extent to which the priorities of foreign investors align with the country's long-term interests.

Interview № 2.

Expert: An expert from the Presidential Institute for Strategic and Interregional Studies (ISMS), specializing in foreign investment and regional development.

Question 1: How effectively are various levels of government (national, regional, and local) coordinated in spatial planning? What are the main institutional challenges, including transparency, public participation, and long-term strategic planning?

Answer: In Uzbekistan, coordination between national, regional, and local authorities is gradually improving. National strategies set the general directions for development, while regional and local authorities implement them taking local specifics into account. Efforts are being made to enhance transparency and public participation by improving access to plans and engaging stakeholders. Long-term strategic planning is developing, although its effectiveness largely depends on the availability of resources and the capacity for monitoring and evaluating results."

Question 2: Which third-party organizations and external actors engage in spatial planning in Uzbekistan?

Answer: "International financial organizations, such as the World Bank and the Asian Development Bank, as well as several UN agencies, engage in spatial planning, providing methodological and financial support. Foreign consulting firms are engaged in project preparation and analytical studies. Local academic and research institutions also contribute to planning and strategy development by offering research and recommendations."

Question 3: What problems and challenges in spatial planning in Uzbekistan do you consider the most critical?

Answer: "The main challenges are related to the further development of the institutional framework and data digitalization, which would allow planning to become more efficient and based on up-to-date information. Efforts are also underway to improve the qualifications of specialists at all levels and enhance mechanisms for public participation. Overall, the spatial planning process is actively evolving, taking into account economic, social, and environmental aspects."

Question 4: How do foreign investments, international organizations, and global trends influence spatial planning strategies and governance in Uzbekistan?

Answer: "Foreign investments and international organizations have a positive impact by providing expertise, standards, and financial support for project implementation. Global trends, such as smart cities, sustainable development, and climate adaptation, are gradually being integrated into national and regional strategies. Special attention is given to adapting international experience to local conditions to ensure that strategies and projects are realistic and sustainable."

Question 5: What changes have occurred in Uzbekistan's transport system due to BRI projects, such as railway and highway modernization? Has connectivity between cities and regions improved? How has this affected the economic development of border areas?

Answer: "The most noticeable changes are associated with the development of railway infrastructure. The constructed Angren–Pap line connected the Fergana Valley with central regions without transit through Tajikistan, significantly reducing transport risks and strengthening economic integration. Accessibility to eastern regions has improved, and cities along the new transport corridors have received a development boost, like logistics and industrial hubs. For border areas, this means increased employment and investment attraction, although there remains an issue of uneven benefits: regions included in the corridors develop faster than those left out."

Question 6: How does the China-Kyrgyzstan-Uzbekistan (CKU) railway affect spatial development and logistics infrastructure in the country? Which regions benefit the most? Has the structure of transport flows changed?

Answer: "The CKU railway is still in the negotiation and preparation stage, but it is already clear that its implementation will radically change transport flow patterns. The greatest benefits will go to the Andijan and Namangan regions, which will be directly connected to international routes. In the long term, this will allow the Fergana Valley to become an important transit hub connecting China, Central Asia, and the Middle East. At the same time, new routes will redistribute transport flows: some cargo will bypass traditional routes through Kazakhstan, reducing dependence on northern directions."

Question 7: How have BRI projects—railways, logistics hubs—changed approaches to spatial planning and territorial governance? Have new mechanisms for regulation or coordination between levels of government emerged?

Answer: "Yes, one can speak of the formation of a 'hybrid planning model.' On the one hand, a centralized system remains, where key decisions are made by the Presidential Administration and the government. On the other hand, BRI projects require more flexible coordination with foreign partners. This has led to accelerated land allocation procedures, simplified rules for free economic zones, and the introduction of new forms of public-private partnerships. However, these mechanisms are often implemented 'from above,' without full participation of local communities, creating a risk of conflicts."

Question 8: What role do Uzbek authorities play in decision-making on BRI projects? What mechanisms exist to monitor Chinese investments? Are national interests considered in infrastructure projects?

Answer: "Uzbekistan strives to maintain control over key decisions. All strategic projects pass through the Cabinet of Ministers or the Presidential Administration. At the same time, when implementing projects with Chinese companies—for example, in the Navoi or Jizzakh free economic zones—many processes are accelerated, and some procedures (such as environmental assessments) are conducted formally. National interests are considered in routing and employment issues: participation of local workers and production localization is mandatory. However, balancing speed of implementation and quality of regulation remains a challenge."

Question 9: How are negotiations with Chinese companies under the BRI regulated? Who are the key actors in this process? Are the interests of local communities considered?

Answer: "Negotiations are mainly conducted through the Ministry of Investments, Industry and Trade, as well as the Ministry of Transport. The Presidential Administration plays a key role in defining priorities and the framework for cooperation. Formally, projects are coordinated with local khokimiyats, but real community involvement is limited. In cases involving resettlement or changes in land use, conflicts arise, for example, regarding the placement of industrial facilities. These issues are currently addressed on a case-by-case basis, without a systematic mechanism to protect the interests of residents."

Question 10: What sovereignty risks may arise from Chinese infrastructure investments? Is there a concern about debt dependence? How are national and external interests balanced?

Answer: "There is no direct risk of debt dependence, as in some other countries, because projects are financed under a mixed scheme: part of the funds are loans, part are government and private investments. However, there is a risk of institutional dependence: accelerated procedures introduced under the BRI may weaken requirements for environmental and social standards. In the long term, investor interests mustn't replace national priorities. To address this,

Uzbekistan follows a multi-vector strategy, balancing relations with China, Russia, the EU, and other partners."

Question 11: How do BRI projects affect local communities and land use? Have there been cases of resettlement or changes in resource access?

Answer: "Yes, such cases exist. For example, during the expansion of industrial zones in the Navoi region, some agricultural land was converted to industrial use. This involved the resettlement of several dozen families. Compensation was provided, but residents complained about insufficient information and the lack of alternatives. Overall, the impact on local communities is mixed: new jobs and infrastructure are positive, but restricted access to land and environmental pressures are negative."

Question 12: What environmental risks accompany BRI projects in Uzbekistan? What measures are being taken to minimize negative impacts?

Answer: "The most serious risks are related to water resources, soil erosion, and pollution in construction areas. Arid regions such as Navoi and Bukhara are particularly vulnerable. Environmental impact assessment mechanisms are formally applied, but under accelerated construction, their quality often leaves much to be desired. In practice, mitigation measures focus on technical solutions - slope stabilization, wastewater filtration systems. However, integration of environmental standards into strategic planning remains insufficient and is one of the key challenges."

Interview № 3.

Expert: Employee of State Unitary Enterprise "TashkentboshplanLITI"

Question 1: How effectively are various levels of government (national, regional, and local) coordinated in spatial planning? What are the main institutional challenges, including transparency, public participation, and long-term strategic planning?

Answer: "Overall, coordination between government-level functions, but in practice delays often occur when aligning projects between regional and national authorities. The challenge is that different agencies use their own planning approaches, so projects sometimes need adjustments at later stages. We are also actively working to improve public consultation mechanisms, but citizen participation in territorial planning remains limited."

Question 2: Which third-party organizations and external actors are involved in spatial planning in Uzbekistan?

Answer: "Spatial planning involves not only major international banks and UN agencies but also private foreign consulting firms, especially in the transport and infrastructure sectors. Interestingly, the role of local universities and research centers has been growing in recent years, helping to adapt international experience to local realities. We see that collaboration with external participants accelerates the adoption of new technologies but requires constant oversight to ensure alignment with national interests."

Question 3: What problems and challenges in spatial planning in Uzbekistan do you consider the most critical?

Answer: "The main problem is integrating different types of data into a single planning system. For example, land use and transport flow data are often collected by different agencies and are difficult to reconcile. Another challenge is limited local human resources: many specialists must work across multiple areas simultaneously, which reduces planning efficiency. Over time, we aim to address these issues through digitalization and training of new personnel."

Question 4: How do foreign investments, international organizations, and global trends influence spatial planning strategies and governance in Uzbekistan?

Answer: "Foreign investments help accelerate the development of major transport and logistics projects, such as the modernization of railways and highways. However, it is important to adapt international practices to local realities, including geographical and social characteristics of the regions. Global trends, such as smart cities and sustainable development, are being gradually implemented, and we strive to incorporate them into long-term territorial development strategies."

Part 2: BRI Influence on Spatial Planning

Question 5: What changes have occurred in Uzbekistan's transport system due to BRI projects, such as railway and highway modernization? Has connectivity between cities and regions improved? How has this affected the economic development of border areas?

Answer: "BRI projects have improved not only the main transport corridors but also secondary roads connecting smaller towns and districts. This has led to increased internal mobility and the development of local markets. Economic development in border areas has become more noticeable, with more logistics and trade opportunities emerging."

Question 6: How does the China-Kyrgyzstan-Uzbekistan (CKU) railway affect spatial development and logistics infrastructure in the country? Which regions benefit the most? Has the structure of transport flows changed?

Answer: "The CKU railway has particularly affected eastern regions, creating new routes for freight transport and improving logistics for farms and industrial zones. In some areas, transport flows have changed, requiring adjustments to regional plans and infrastructure strategies."

Question 7: How have BRI projects—railways, logistics hubs—changed approaches to spatial planning and territorial governance? Have new mechanisms for regulation or coordination between levels of government emerged?

Answer: "BRI projects have shown that transport and logistics corridors must be planned comprehensively, considering all levels of government. We have started incorporating infrastructure investments into territorial development schemes to enhance project coherence and account for the economic impact on regions."

Question 8: What role do Uzbek authorities play in decision-making on BRI projects? What mechanisms exist to monitor Chinese investments? Are national interests considered in infrastructure projects?

Answer: "At all stages of project implementation, Uzbek authorities actively participate in decision-making and monitoring. National interests are considered when selecting sites, determining investment volumes, and choosing technological solutions. It is important for us that projects align with both economic goals and regional strategic plans."

Question 9: How are negotiations with Chinese companies under the BRI regulated? Who are the key actors in this process? Are the interests of local communities considered?

Answer: "Negotiations with Chinese investors are conducted through relevant ministries, while regional authorities play a key role in assessing local needs. Public interests are considered through consultations during the design phase, although the degree of local community involvement depends on the project's scale."

Question 10: What sovereignty risks may arise from Chinese infrastructure investments? Is there a concern about debt dependence? How are national and external interests balanced?

Answer: "Sovereign interests are maintained through approval and control systems. Potential debt risks are assessed at the agreement signing stage. We strive to maintain a balance between national and external interests through ongoing monitoring and adjustment of project implementation conditions."

Question 11: How do BRI projects affect local communities and land use? Have there been cases of resettlement or changes in resource access?

Answer: "In some cases, projects have required adjustments to land use and relocation of certain facilities. At the same time, BRI projects create new opportunities for local residents: access to resources and jobs has improved, and infrastructure in the regions is becoming more modern."

Question 12: What environmental risks accompany BRI projects in Uzbekistan? What measures are being taken to minimize negative impacts?

Answer: "Environmental issues are closely monitored, including impacts on soil, water resources, and biodiversity. Modern construction technologies, environmental assessments, and monitoring are applied to minimize negative effects. We are also working to integrate environmental standards into long-term territorial planning."

Interview № 4.

Expert: Sinologist

Question 1: How effectively are various levels of government (national, regional, and local) coordinated in spatial planning? What are the main institutional challenges, including transparency, public participation, and long-term strategic planning?

Answer: "National and regional levels are coordinated through planning directives from the Cabinet of Ministers and the Ministry of Investments, but in practice, regional authorities face delays in project approvals, especially when foreign investments are involved. The issue is that existing regulations are not always integrated with mechanisms for assessing economic returns. For example, when planning BRI transport corridors, schemes often need adjustments due to misalignment between national strategies and regional development plans."

Question 2: Which third-party organizations and external actors are involved in spatial planning in Uzbekistan?

Answer: "In addition to the World Bank and the Asian Development Bank, key roles are played by Chinese investors and companies—China Railway, CRRC, Sinohydro. They participate in railway modernization and the construction of logistics hubs. Uzbek academic centers, such as the Transport Research Institute under the Ministry of Transport, are also actively involved, adapting international standards to local conditions and developing transport and logistics schemes."

Question 3: What problems and challenges in spatial planning in Uzbekistan do you consider the most critical?

Answer: "The main challenge is integrating new international projects into existing infrastructure. For example, the CKU railway requires a revision of logistics flows in Tashkent, Syrdarya, and Fergana regions. The lack of digital data and weak automation of planning complicates forecasting the economic efficiency of projects. There is also a shortage of specialists capable of combining territorial planning with international investments."

Question 4: How do foreign investments, international organizations, and global trends influence spatial planning strategies and governance in Uzbekistan?

Answer: "BRI projects and direct Chinese investments allow for the implementation of international standards in transport and industrial infrastructure. For instance, the modernization of the Tashkent–Osh railway has improved international freight transportation. The influence of global trends is evident in the integration of transport corridors into strategic development maps of cities and industrial zones, emphasizing long-term logistical sustainability."

Part 2: BRI Influence on Spatial Planning (China Expert)

Question 5: What changes have occurred in Uzbekistan's transport system due to BRI projects, such as railway and highway modernization? Has connectivity between cities and regions improved? How has this affected the economic development of border areas?

Answer: "BRI projects have modernized the Tashkent–Fergana and Tashkent–Navoi railways, as well as roads M39 and M37. Freight route capacity has increased on average by 25–30%, reducing delivery times between regions and enhancing the investment attractiveness of border zones, particularly in the Syrdarya region, where an industrial park is developing."

Question 6: How does the China-Kyrgyzstan-Uzbekistan (CKU) railway affect spatial development and logistics infrastructure in the country? Which regions benefit the most? Has the structure of transport flows changed?

Answer: "The CKU railway has changed logistics flows in eastern Uzbekistan and the Fergana Valley. The main benefit is nearly halving delivery times for Chinese and Kyrgyz cargo to the Uzbek market. This has led to increased demand for local logistics hubs and stimulated the development of warehousing and production zones along the route."

Question 7: How have BRI projects—railways, logistics hubs—changed approaches to spatial planning and territorial governance? Have new mechanisms for regulation or coordination between levels of government emerged?

Answer: "BRI projects require integrating international transport corridors into territorial development plans. There is a need to consider not only economic effects but also diplomatic obligations. For example, planning the CKU railway takes into account the balance between national interests and the conditions of Chinese loans, affecting the prioritization of infrastructure projects in the regions."

Question 8: What role do Uzbek authorities play in decision-making on BRI projects? What mechanisms exist to monitor Chinese investments? Are national interests considered in infrastructure projects?

Answer: "Uzbek authorities participate in the approval of construction sites, monitoring timelines, and ensuring compliance with safety standards. National interests are safeguarded through the approval of investment agreements with the Ministry of Finance and the Ministry of Transport, as well as through analytical centers that assess impacts on the domestic economy and logistics flows."

Question 9: How are negotiations with Chinese companies under the BRI regulated? Who are the key actors in this process? Are the interests of local communities considered?

Answer: "Negotiations are conducted through relevant ministries and expert councils, including representatives of regional administrations. Special attention is given to protecting the interests of local communities: for instance, land issues and access to water resources were considered during the CKU railway construction."

Question 10: What sovereignty risks may arise from Chinese infrastructure investments? Is there a concern about debt dependence? How are national and external interests balanced?

Answer: "Sovereignty risks include potential debt dependence and limited maneuverability in infrastructure policy. To mitigate them, all projects undergo economic feasibility assessments, and the terms of credit agreements are carefully aligned with national interests. The BRI is viewed as a tool for strategic development, but with mandatory risk checks."

Question 11: How do BRI projects affect local communities and land use? Have there been cases of resettlement or changes in resource access?

Answer: "The impact on local communities' manifests in the redistribution of land use along transport corridors. For example, compensation measures were carried out for farms in Syrdarya and Fergana regions. At the same time, access to markets and jobs has improved, enhancing the economic integration of the regions."

Question 12: What environmental risks accompany BRI projects in Uzbekistan? What measures are being taken to minimize negative impacts?

Answer: "The CKU railway and energy projects are accompanied by environmental assessments, including analyses of impacts on water resources and biodiversity. Modern construction technologies and monitoring systems are used. Measures are implemented to preserve soil and water bodies, minimizing negative environmental consequences."

Interview № 5.

Expert: Economist

Question 1: How effectively are various levels of government (national and regional) coordinated in spatial planning? What are the main institutional challenges, including transparency and long-term financial strategies?

Answer:

"From an economic perspective, coordination between national and regional levels functions through financial and investment directives, but in practice, delays occur in budget approvals and fund allocation. For example, infrastructure projects often require approval from multiple ministries, which extends implementation timelines. The main institutional challenge is the lack of transparency in resource distribution and the weak integration of long-term financial strategies with territorial plans."

Question 2: What third-party organizations and external actors are involved in spatial planning in Uzbekistan?

Answer:

"International financial organizations, such as the World Bank and the Asian Development Bank, as well as Chinese investor companies within the BRI framework, actively participate in planning. They provide loans, grants, and technical support. Private investment and consulting firms also help assess the economic returns of projects and develop financially sustainable implementation models."

Question 3: What are the main problems and challenges in spatial planning in Uzbekistan?

Answer:

"The main economic challenge is integrating international projects with the national budget. For example, CKU railway projects or the modernization of the Tashkent–Navoi route require significant investments and loan financing, increasing debt burdens. Additionally, there is a need

to evaluate the efficiency of investments in transport and logistics infrastructure to maximize returns and stimulate regional economic development."

Question 4: How do foreign investments, international organizations, and global trends influence spatial planning strategies and governance in Uzbekistan?

Answer:

"Foreign investments stimulate infrastructure development, but BRI loans increase financial vulnerability. The economic returns of such projects are often uncertain in the long term, and debt burdens may limit funding for national priorities, such as education, healthcare, or local entrepreneurship."

Part 2: BRI Influence on Spatial Planning

Question 5: What changes have occurred in Uzbekistan's transport system due to BRI projects, such as railway and highway modernization? How has connectivity and economic development been affected?

Answer:

"BRI has modernized key railways, but projects are mostly financed through loans with long-term obligations. From a budgetary perspective, this creates a strain on public finances, and economic efficiency does not always justify the investment volumes, especially in regions with low economic activity."

Question 6: How has the China-Kyrgyzstan-Uzbekistan (CKU) railway influenced spatial development and logistics infrastructure? Which regions benefit most?

Answer:

"The CKU railway has improved logistics, but its implementation was only possible through large loans. This increases debt risks and limits funding opportunities for other infrastructure projects. Furthermore, benefits for regions are unevenly distributed: eastern regions gain more, while western regions receive fewer economic advantages."

Question 7: How have BRI projects affected approaches to spatial planning and territorial governance?

Answer:

"BRI forces the integration of large investment projects into territorial plans, but this creates dependence on external financing. In the long term, this may limit national capacity to plan projects according to their own economic priorities and adjust the budget."

Question 8: What role do Uzbek authorities play in decision-making on BRI projects? How are national interests considered?

Answer:

"Authorities participate in monitoring and approving projects, but with high loan obligations, national decisions are often constrained by the terms of financial agreements with investors. This reduces flexibility in managing the economy and allocating resources."

Question 9: How are negotiations with Chinese companies under BRI regulated? How are local community interests addressed?

Answer:

"Negotiations are conducted through relevant ministries, but under significant debt obligations, key project decisions can effectively be dictated by the terms of loan agreements. This limits the ability to consider long-term national interests and the interests of local communities."

Question 10: What sovereignty risks could arise from Chinese infrastructure investments? Are there concerns about debt dependence?

Answer:

"The main risk is debt dependence and reduced economic autonomy. BRI projects require large-scale loans, which limit the government's ability to make independent financial decisions. The balance between national and external interests is often tilted in favor of the lender."

Question 11: How have BRI projects affected local communities and land use?

Answer:

"The economic effect of BRI is visible through job creation, but debt obligations can limit funding for other programs supporting local populations. In some cases, land redistribution for infrastructure projects is carried out without full compensation for local communities."

Question 12: What environmental risks accompany BRI implementation in Uzbekistan? What measures are being taken?

Answer:

"Environmental standards are observed, but additional costs for impact mitigation often fall on the state budget, increasing the financial burden. Moreover, project costs rise, and their economic returns remain uncertain."

Interview № 6.

Expert: Ecological expert, State Committee of Ecology

Part 1: Spatial planning in Uzbekistan

Question 1: How effectively are different government levels coordinated in spatial planning? What are the main institutional challenges?

Answer:

"Coordination between national, regional, and local levels in Uzbekistan is gradually improving through the implementation of the National Sustainable Development Program until 2030 and the Territorial Development Plan."

Question 2: Which third-party organizations and external actors are involved in spatial planning?

Answer:

"Spatial planning involves international organizations such as UNDP, World Bank, and the Asian Development Bank, which require compliance with international sustainable development standards, including IFC Performance Standards and ISO 14001. Scientific institutes, including the Institute of Water Problems, Forest Institute, and Ecology Research Institutes, provide detailed forecasts on hydrology, erosion, and biodiversity. Private consulting companies in large infrastructure projects, such as railways and roads, are obliged to conduct environmental expertise."

Question 3: What are the key problems and challenges in spatial planning?

Answer:

"The main problems include insufficient integration of environmental indicators into strategic planning, as impacts on water resources, soils, and biodiversity are often not quantitatively considered during transport corridor planning. There is also a human resources deficit: according to the State Committee of Ecology, there is only 1 specialist per 200 km² per environmental inspection in regions, which is insufficient for monitoring. Additionally, the adoption of modern technologies such as satellite monitoring, GIS, and drones is low and used only in pilot projects."

Question 4: How do foreign investments and global trends influence spatial planning and governance?

Answer:

"BRI and international loans stimulate the adoption of high environmental standards. For example, during the reconstruction of the Tashkent–Samarkand railway according to Chinese investor

standards, wastewater treatment systems and noise reduction technologies for populated areas were installed."

Part 2: BRI Influence on Spatial Planning in Uzbekistan

Question 5: What changes have occurred in Uzbekistan's transport system due to BRI projects? Has connectivity improved? How does this affect the environment?

Answer:

"BRI projects have modernized key railway hubs and highways, increasing capacity by 30–40% according to the Ministry of Transport. From an environmental perspective, this has led to increased anthropogenic pressure on coastal water bodies and nature reserves, the need to create buffer zones around new roads and railway lines, and the implementation of noise-reduction and waterproofing structures along transport routes."

Question 6: How has the CKU railway influenced spatial development and the country's logistics infrastructure?

Answer:

"The main ecological impact is the construction of the railway through mountainous and forested areas of Jizzakh and Fergana regions. Expert calculations show that without land reclamation, approximately 120 hectares of forest would be lost, and soil erosion would increase by 15–20% in adjacent areas. Measures taken include planting compensatory forest areas, constructing engineering protective structures, and water drainage systems."

Question 7: How have BRI projects changed approaches to spatial planning and territorial governance?

Answer:

"BRI requires strengthening interagency cooperation, as the Ministry of Transport, State Committee of Ecology, and local authorities must jointly approve projects. New regulations are being developed, including mandatory Strategic Environmental Assessment (SEA) for projects exceeding \$50 million. GIS modeling and 3D terrain mapping are now included in the mandatory documentation before infrastructure project approval."

Question 8: What role do Uzbek authorities play in decision-making on BRI projects?

Answer:

"National authorities approve environmental standards, monitor compliance, and audit

contractors. Within BRI, control points have been introduced, including water, soil, and air monitoring at each major site every three months."

Question 9: How are negotiations with Chinese companies under BRI regulated?

Answer:

"The Ministry of Transport, State Committee of Ecology, and Ministry of Foreign Affairs participate in negotiations. Environmental aspects are included in contracts, such as mandatory reclamation measures, minimizing biodiversity impact, and compensation programs for local communities."

Question 10: What sovereignty or debt risks could arise from BRI projects?

Answer:

"The main risk is environmental: without strict control, projects can violate environmental legislation and degrade resources. National mechanisms allow balancing the interests of external investors with sovereign environmental standards."

Question 11: How have BRI projects affected local communities and land use?

Answer:

"Population relocation is minimal, mostly compensated with cash payments and alternative land plots. Environmental assessments consider water resources, soil, and biodiversity. For example, during the Tashkent–Samarkand railway construction, five bird species and two reptile species under protection were identified, and protective zones were established."

Question 12: What environmental risks accompany BRI implementation? What mitigation measures are applied?

Answer:

"Key risks include soil degradation, water pollution, and noise impact. Mitigation measures include Strategic Environmental Assessment, land reclamation, engineering protective structures, regular monitoring, GIS mapping, and online publication of data for transparency."