

# Naryn

Kyrgyz Republic

2023-2024

## Enhancing Resilience through Integrated Spatial and Investment Planning



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation



# Foreword



On behalf of UN-Habitat, it is our privilege to present this compendium of tools and strategies developed under the Naryn Urban Resilience Programme (NURP), marking a significant step in our shared commitment to fostering sustainable, inclusive, and resilient urban development in Naryn, Kyrgyzstan, through collaboration between the Swiss Secretariat for Economic Affairs, UN-Habitat, the Aga Khan Development Network (AKDN) and NURP partners, and local authorities.

Naryn, with its unique geographical position, cultural heritage, and natural resources, holds significant growth potential but faces challenges, including environmental vulnerabilities, infrastructure gaps, and socio-economic disparities. Recognising these realities, UN-Habitat used a people-centred and integrated approach to develop a strategic and evidence-based pathway for Naryn to address these challenges, build resilience, and unlock sustainable urban development opportunities.

The suite of actionable tools and strategies is designed to empower local authorities, stakeholders, and communities to take informed and prioritised decisions. In this way, they are tailored to be adaptive to Naryn's needs and local conditions as it embarks on its journey towards sustainable and resilient development.

**Naryn Town Profile:** This document provides an in-depth, people-centred assessment of Naryn's spatial, environmental, social, legislative, and economic dimensions, highlighting risks and opportunities for sustainable growth and an integrated evidence-base for decision-making and targeted interventions. It is

presented with a **Legal Analysis of Kyrgyz Building Codes** and **Analysis of Kyrgyz Legislation**.

**Strategic Spatial Plan:** Building on the Town Profile, the strategic spatial plan describes actions that could address the key challenges facing Naryn, such as natural hazards, monocentric development, and inefficient land use. It provides a set of spatial, financial, economic and legal recommendations to respond to the challenges, and aligns with global frameworks like the Sustainable Development Goals and New Urban Agenda, and local planning priorities, while ensuring that Naryn's growth is inclusive, sustainable, and resilient.

**Design Concepts and Guidelines:** Including selected demonstration sites and city-wide interventions, these guidelines offer a vision for Naryn's future urban development, integrating sustainable, nature-based solutions while preserving cultural and natural heritage. They ensure new developments enhance the town's identity and promote connectivity, compactness, resilience, inclusivity, and vibrancy and align with local ambitions, priorities and conditions.

**Spatially-Informed Capital Investment Plan (CIP):** The CIP offers a prioritised list of strategic projects based on a Multi-Criteria Assessment (MCA), that would ensure holistic impact and efficient resource allocation. It bridges the gap between planning and implementation, guiding financial resources toward the most impactful interventions, and offering a tool for data-driven decision-making.

**Investment Cards:** These concise, action-oriented cards are designed to support Naryn as it engages with development partners. It uses the example of high-priority and high-impact projects, highlighting key information to facilitate partnerships, attract funding, ensure tangible community benefits, and support project implementation, .

Together, these outputs form an integrated framework to support the Government of Kyrgyzstan and the Municipality of Naryn to address its challenges systematically, resiliently and inclusively. By leveraging these tools, local authorities can:

- Enhance disaster preparedness, respond to climate change, and reduce vulnerabilities to natural and human-made hazards.
- Optimise land use and infrastructure investments to support sustainable, regenerative urban growth.
- Strengthen institutional capacity for urban planning and resilience-building.
- Foster economic diversification and improve living conditions, particularly for vulnerable groups.

UN-Habitat is proud to have contributed to this milestone in Naryn. We believe the outputs of the Naryn Urban Resilience Programme can serve as a model for other cities in Kyrgyzstan and beyond, showcasing the transformative potential of integrated urban planning and investment. We extend our gratitude to the Government of Kyrgyzstan, the Municipality of Naryn, and all partners for their unwavering commitment to this initiative, shaping a sustainable and resilient future for Naryn and its people.



# Developing a suite of tools and strategies for Naryn

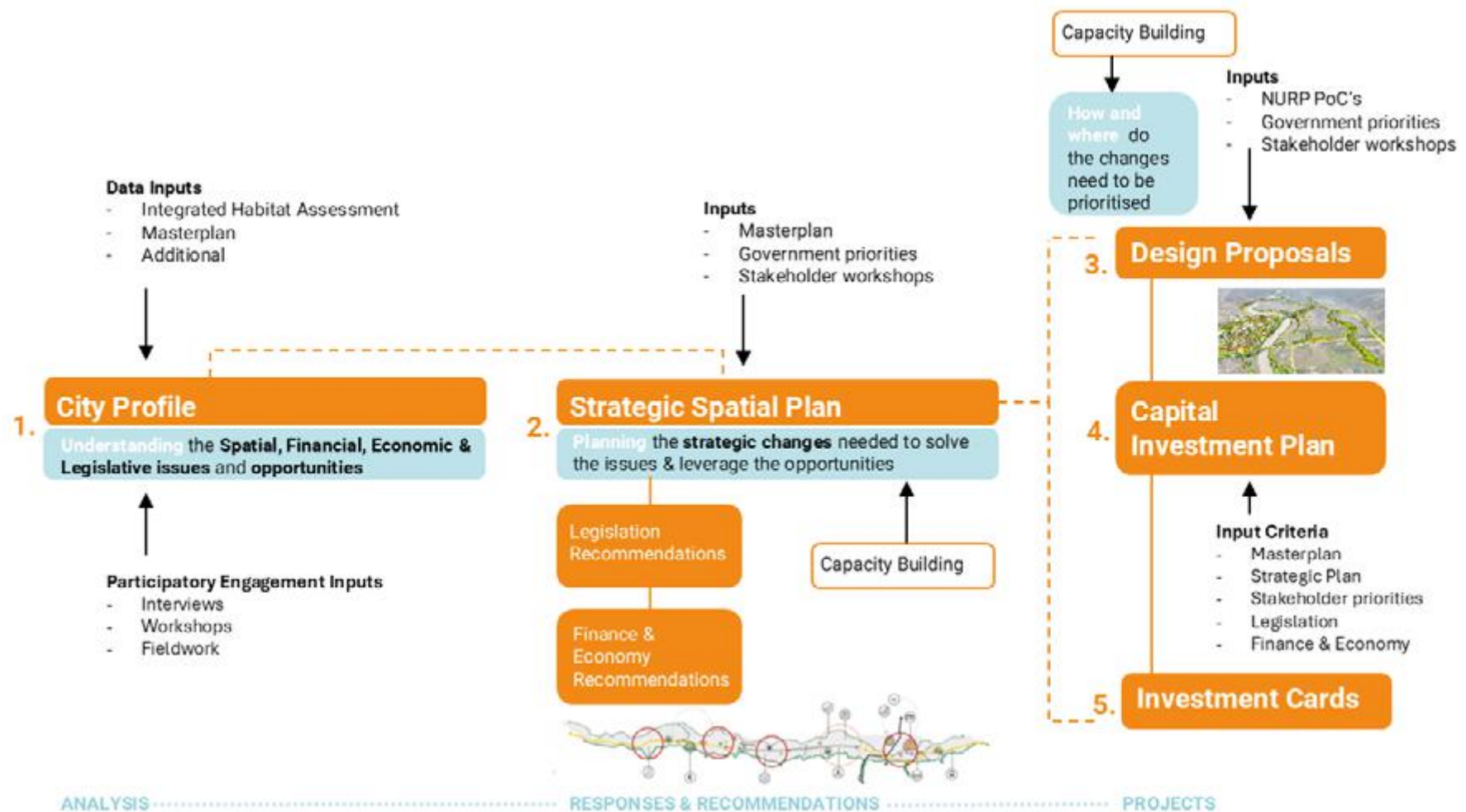


Figure 1. Project framework showing interrelation between phases, processes, and outcomes

# How to use the compendium

1.

These reports are based on a detailed, integrated data analysis and provide a spatialised evidence base to support decision-making in Naryn. They describe the challenges facing the region while also highlighting opportunities unique to Naryn's context, emphasising the importance of addressing these issues in an integrated manner. The reports conclude by identifying priority areas to foster resilient and sustainable growth.



**What are the spatial, financial, economic, and legislative challenges facing Naryn, and what opportunities can be harnessed to support the city's growth?**

2.

This report draws on the evidence base to recommend strategic, cross-sector actions that address Naryn's challenges in an integrated way, unlocking the city's potential. It outlines targeted responses to these issues and illustrates their potential for holistic impact on the city as a whole.



**What strategic actions can address the challenges and opportunities in Naryn in a manner that best responds to its current urban conditions and trends?**



UN-Habitat's approaches are rooted in participatory, inclusive, and engaging methods. This report complements the main reports by detailing the processes and tools used to promote inclusion, ownership, and stewardship of the strategies and plans. It also provides insights for future engagements.



Building capacity among stakeholders is a crucial complement to UN-Habitat's technical support, ensuring the long-term sustainability of strategies and plans. This report outlines the approach to capacity building in Naryn and provides recommendations for ongoing learning and development in the City.

### Enablers for long-term sustainable and inclusive impact

## 3.

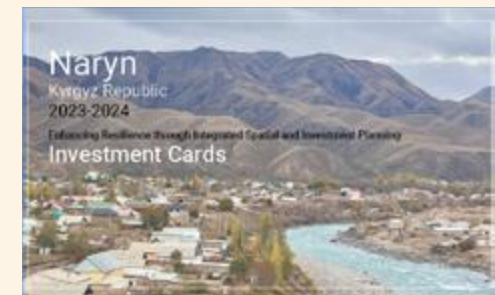
The design reports offer a conceptual visualisation of how plans can be implemented in Naryn. Together with the base of the Town Profile and the Strategic Spatial Plan, these design concepts and guidelines guide the City and stakeholders, and offer support for decision-making on urban design that retains a holistic sustainable impact on Naryn's trajectory. The concepts and guidelines reflect the local conditions, priorities and ambitions, while aligning to global frameworks and best practices.



## 4.

The capital investment plan serves as an initial step towards securing project financing. It provides the City with a decision-making tool for investments, using multiple criteria that prioritise holistic impact and efficient resource planning. The plan concludes with a list of priority projects. Accompanying investment cards offer a resource for the City to engage with partners as it implements its short-, medium- and long-term initiatives.

## 5.



How should Naryn prioritise its urban development, and where should investments be targeted to transform the city?







# Naryn

Kyrgyz Republic

2023-2024

Enhancing Resilience through Integrated Spatial and Investment Planning

## Naryn Town Profile



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation





## Enhancing Resilience through Integrated Spatial and Investment Planning

### Naryn Town Profile

© 2024. Aga Khan Agency for Habitat (AKAH)  
United Nations Human Settlements Programme  
(UN-Habitat)

United Nations Human Settlements Programme  
P.O. Box 30030, 00100 Nairobi GPO KENYA  
Tel.: 254-020-7623120  
www.unhabitat.org

#### Disclaimer

Material in this report does not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or regarding its economic system or degree of development. The analysis, conclusions and recommendations of this publication do not necessarily reflect the views of the United Nations Human Settlements Programme or its Governing Council or its member states.

Reference in this publication of any specific commercial products, brand names, processes, or services, or the use of any trade, firm, or corporation name does not constitute endorsement, recommendation, or favouring by UN-Habitat or its officers, nor does such a reference constitute an endorsement of UN-Habitat.

#### UN-Habitat Urban Lab

Laura Petrella (Chief, Planning, Finance and Economy Section)  
Herman Jean Pienaar (Technical Advisor)  
Pinar Caglin (Project Manager, Planning and Design Technical Lead)  
Lennart Fleck (Finance and Economy Team Lead)  
Anne Amin (Governance and Legislation Team Lead)

#### Main Authors

Maia Smillie (Urban Planner)  
Shaakira Chohan (Urban Planner)  
Semiha Turgut (Spatial Analysis Expert, Urban Planner)  
Anastasia Ignatova (Urban Designer)  
Yassine Moustanjidi (Urban Designer)  
Kate Cotty (Urban Finance & Economy Consultant)  
Omar Morales Lopes (Urban Economy Consultant)  
Anna Kvashuk (Urban Legislation)  
Samuel Njuguna (Urban Law and Governance Expert)

#### Layout Design & Graphics

Maia Smillie  
Shaakira Chohan  
Teodora-Irina Comanita  
Yassine Moustanjidi

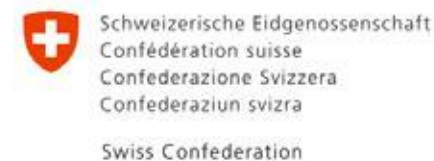
#### **AKDN, Project Mangement Unit**

Surekha Ghogale (Senior Advisor)  
Omurbek Ibraev (Project Manager)  
Nurbek Omurzakov  
Aizaada Bekboeva  
Salamat Ismakeeva

#### **Aga Khan Agency for Habitat**

Aziz Husein (Head of Sustainable Built Environment and Capital Projects)  
Kira Intrator (Head of Planning and Innovation)

And with thanks to all who participated in meetings, field trips and working sessions from the government, service providers, AKAH, AKDN, UCA and inhabitants of Naryn.



# Contents

1. Background	4
2. Introduction	12
3. Legislation Context	20
4. Financial Context	44
5. Economic Context	56
6. Planning context	68
7. Strategic Issues	156
8. Conclusion	174

# 1. Background

## Purpose of this Document

This document serves as a Profile for Naryn Town, providing an in-depth exploration of its development context, challenges, and opportunities for fostering sustainable and resilient urban growth.

The opening section introduces the broader project context, highlighting the role of UN-Habitat and the frameworks that guide its approach. It establishes an understanding of Naryn Town's legislative, governance, financial, and economic environment, offering insights into its potential for development while identifying key barriers to resilience.

Subsequent sections provide a deeper analysis of the town's spatial performance, focusing on critical thematic areas such as population distribution, infrastructure for education and health, green and public spaces, transport networks, basic services, and vulnerability to natural hazards. These analyses culminate in a diagnosis of the town's strategic challenges, framed around urban planning, governance, and economic resilience.

The document follows a structured approach, using resilience categories that connect spatial analysis with strategic planning recommendations, urban design proposals, and investment prioritisation.

## Project Context

In June 2018, AKDN/AKTC/UCA signed an MoU with the Naryn Town Municipality including for the preparation of the Naryn Town Master Plan, its territorial components,

and the spatial aspects of its urban configuration. During Phases I and II of the Naryn Town Master Plan, now completed, AKDN (AKTC) supported the development of a strategic master plan, and later, the territorial and urban components of the town's masterplan.

Following the approval of the Naryn Town Master Plan Phase II in December 2021, the Mayor's office requested UCA for continued advisory services and support for the Phase III of the masterplan which involved detailed resilience-informed urban planning and the implementation of a pilot initiative, while strengthening institutional capacity and preparing the project for future investment. This led to the Naryn Urban Resilience Programme (NURP).

The NURP is underway. An Integrated Habitat Assessment (IHA) has been completed, which includes hazard, demographic, social resilience and other assessments to understand the carrying capacity of the land and prioritise interventions that would enhance this capacity, while reducing the risks that the land, people and infrastructure face. This level of data for most areas of Kyrgyzstan is not readily accessible, and has not been included in town planning exercises. Examples from its application has included, steering communities away from overgrazed and eroded slopes for pasture to alternative locations that are less prone to triggering debris flows.

Also included in the NURP workstreams, and identified under the UNDRR Resilient Cities data points, are the Resilience Assessments, which include an understanding

of migration trends in Naryn, Town and conducting disaster loss estimates and resiliency baseline surveys, amongst other critical assessment modalities.

Within the broader NURP, additional activities through collaborative effort between AKDN and its subsidiaries (including AKF and AKAH), and the UCA have been identified. These include urban design workshops, Neighbourhood Grants and Plans, and infrastructure investment trainings, amongst others. A framework of collaboration that will be re-assessed through the project, shows the alignment of these activities to the work streams of UN-Habitat, and are indicated in Figure 1.

The NURP supports Naryn Town in shaping its urban development trajectory and align its future investments in a resilient way. The lessons learnt in Naryn Town will be shared with the national level in the frame of a policy dialogue on resilience for further replication. The NURP is fully aligned with the Kyrgyz Republic UNSDCF's Priority Area 2 on supporting national efforts to promote prosperity and resilience for all citizens through inclusive and equitable green socio-economic development, and Priority Area 3 on supporting national efforts to promote inclusive and gender transformative approaches to climate action, disaster risk management and environmental protection to conserve natural resource and leverage ecosystem benefits for sustainable human development.<sup>5</sup>

---

<sup>5</sup> The United Nations Sustainable Development Cooperation Framework (UNSDCF) provides a basis for the UN work in the Kyrgyz Republic. It aligns to national priorities and is anchored in the 2030



This project aligns with the Habitat III New Urban Agenda by specifically meeting “the challenges and opportunities of present and future sustained, inclusive and sustainable economic growth”. It also aims to provide the strategic spatial framework to “adopt and implement disaster risk reduction and management, reduce vulnerability, build resilience and responsiveness to natural and human-made hazards and foster mitigation of and adaptation to climate change”.<sup>6</sup>

## UN-Habitat’s Role

Within the scope of the Naryn Urban Resilience Programme, UN-Habitat is supporting with the incorporation of critical resilience criteria into the ongoing planning work and development of interventions in the town. UN-Habitat will develop both a strategic plan and spatial capital investment plan.

UN-Habitat will therefore build on existing work done so far within the NURP, as well as the existing Naryn Town Master Plan (approved in 2021), in order to enhance the resilience focused urban planning and develop a spatial strategic and investment plan that strengthens and builds on the existing work.

The first steps undertaken by the UN-Habitat team have included a detailed assessment of the spatial and non-spatial data-sets available in Naryn Town. This has included a cleaning of the data sets, including translation and categorising of data sets as well as an assessment of the data validity and quality. In addition, a critical review of the Integrated Habitat Assessment has allowed the UN-Habitat team to identify ways in which the assessment can be strengthened.



Figure 1. NURP Activities and Expected Outputs

Agenda for Sustainable Development and the UN Charter. The framework guides the strategy for sustainable development in the country and outlines strategic priorities to deliver upon the SDGs and the NUA, and effect reform at country level.

<sup>6</sup> UN-Habitat, The New Urban Agenda (2016)

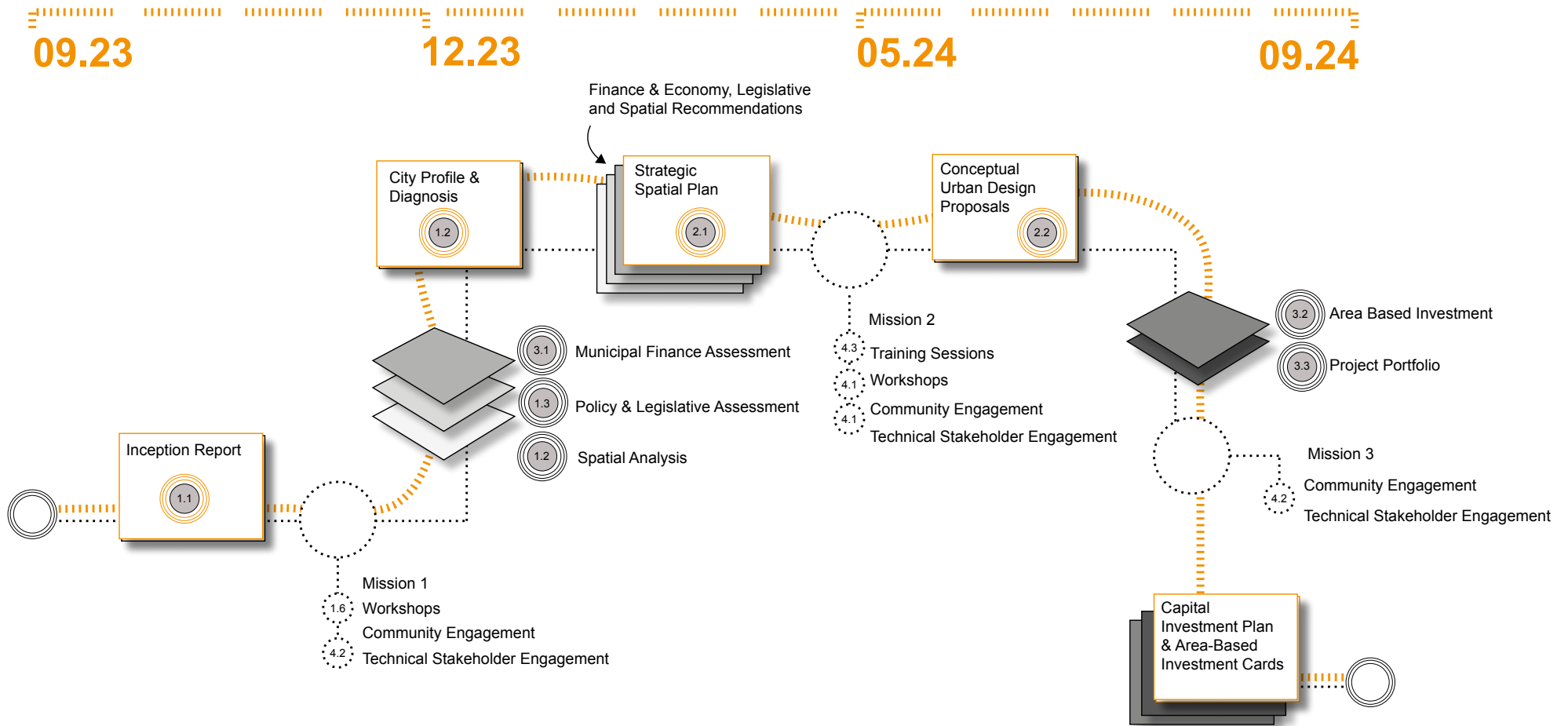


Figure 2. Positioning of the Profile within the project structure

## UN-Habitat's Project Approach and the Role of Resilience Indicators

UN-Habitat has developed a set of resilience criteria and indicators, which are formulated from international guidelines and the Sustainable Development Goals to support local actors in preparing plans for resilience-based urban development. These are used to drive the spatial analysis, the strategic planning recommendations, the investment plan and the participatory activities including training sessions and data collection. Resilience, and indicators of resilience, however, can vary between contexts and can link with a wide range of development indicators and strategies.

UN-Habitat adopts an Integrated Spatial Planning process, using spatial evidence to guide the urban planning process toward five objectives: **Compactness, Connectedness, Inclusiveness, Vibrancy, and Resilience**. These urban planning objectives provide a framework that informs the project assessments and analyses, spatial evidence production, and facilitates the integration of global frameworks, the New Urban Agenda (NUA) and Sustainable Development Goals (SDGs) into the project process and outcomes.

These five objectives are broad strategic goals of sustainable urban planning and are informed by the targets within the NUA and SDGs. Due to the numerous inputs that can inform UN-Habitat's Integrated Spatial Planning process and that must be coordinated between (sectors, scales, stakeholders), grouping information inputs under these five objectives helps to ensure that planning methods (participation exercises, data collection and analysis) are always integrated and considered in a holistic, rather than linear or siloed way.

Resilience, therefore, overlaps between categorisations of the SDGs, and includes environmental, economic, social, legislative and governance, infrastructure and basic services, housing and public facilities both spatial and non-spatial elements. UN-Habitat's integrated, evidence-based approach encourages a more robust and resilient planning process throughout by ensuring these linkages, considering planning in a holistic way (rather than a linear way) and facilitates a flexible, collaborative participatory approach.

**"Achieving a resilient city implies organisational and communities' capacity against immediate and chronic stresses within urban systems, the resources for facilitating in the recovery process, and preparation for future potential challenges. In addition to adapting to the changing dynamics of the world, resilient urban form may rectify existing social and economic structures, improving the overall well-being of the community".<sup>5</sup>**

**"Resilience is: the capacity of people, organisations and systems to prepare for, respond, recover from and thrive in the face of hazards, and to adjust to continual change."<sup>6</sup>**

<sup>5</sup> UN-Habitat's Five Objectives, MY Neighbourhood (2023)

<sup>6</sup> Khan, M. Siravo, F. Notes on Resilient Planning in Naryn, 2021.



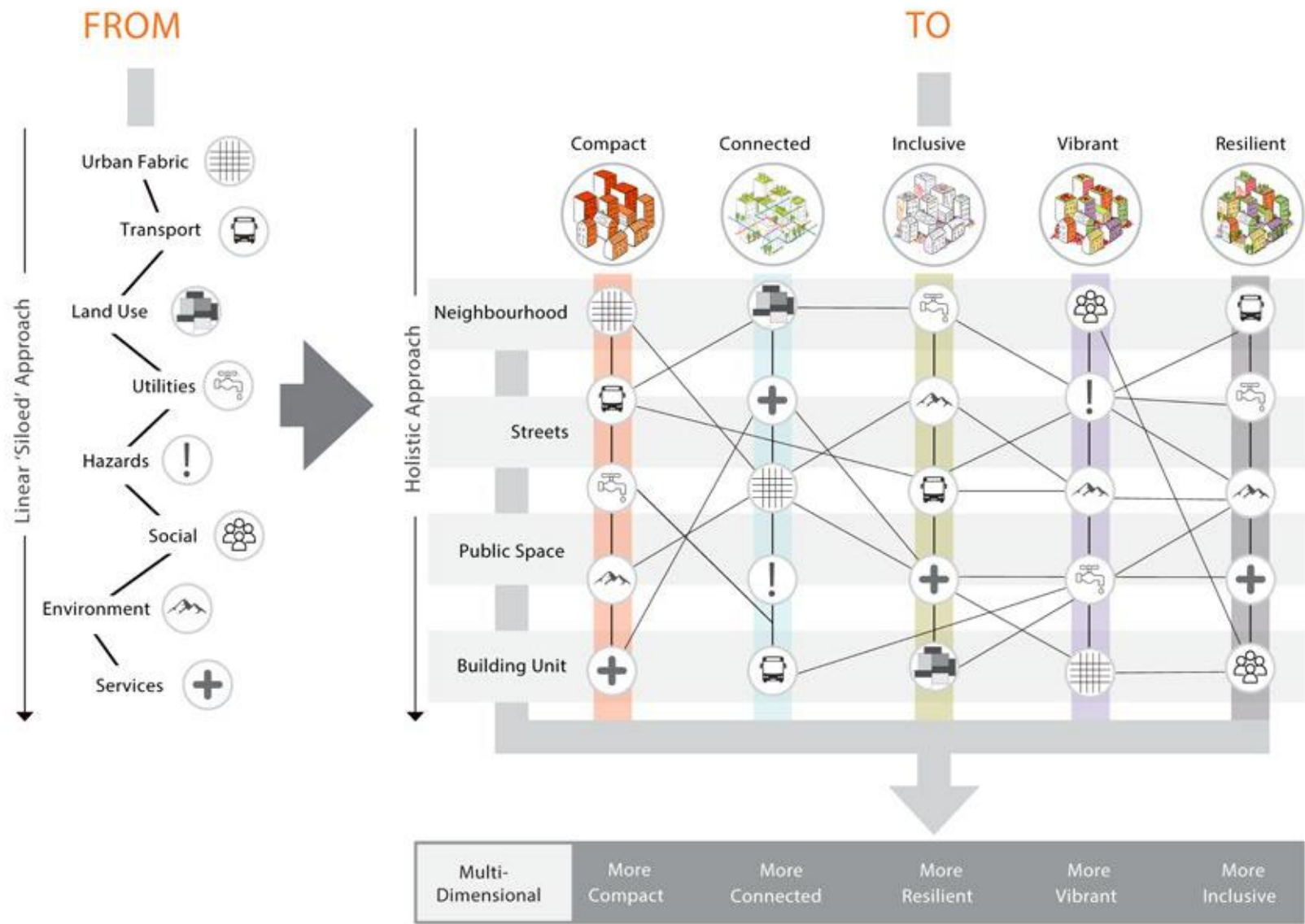


Figure 3. UN-Habitat's Integrated Planning Approach using the Five City Objectives

## Project Status

The first steps undertaken by the UN-Habitat team have included a detailed assessment of the spatial and non-spatial data-sets available in Naryn Town. This has involved a cleaning of the data sets, including translation and categorising of data sets as well as an assessment of the data validity and quality. In addition, a critical review of the Integrated Habitat Assessment has allowed the UN-Habitat team to identify ways in which the assessment can be strengthened.

Furthermore, the UN-Habitat team undertook a field mission to Naryn which enabled the validation of datasets, and a deeper understanding of the opportunities for increased resilience in Naryn Town that are based on both qualitative and quantitative data. During this time, UN-Habitat was able to introduce aspects of its cross-cutting approach of participatory planning using workshops, field visits and working sessions to substantiate the existing data sets, and draw a richer understanding of the local context. Meetings with city authorities, and oblast and national government officials contributed to a better understanding of town and oblast objectives and priorities. Furthermore, working sessions with sector specialists helped the team to collect additional data to inform the understanding and diagnosis of Naryn Town, and provided useful inputs where existing information was missing or inconsistent. This has enabled deeper insights to identify the analyses that are relevant to the context, and will enhance the overall profiling of Naryn and the corresponding future planning.

The town has a number of existing plans and planning activities ongoing, as well as a number of profiles and reports completed that describe the social, environmental, legal, economic and financial context of Naryn Town. Each sector has its own understanding of the needs and opportunities of the town as well as its own development plans, as Phase 1 and 2 of the masterplan have been completed. The Integrated Habitat Assessment, completed by Aga Khan Agency for Habitat also provides a spatial and non-spatial (survey-based) database.

This profile, therefore, builds upon the existing and ongoing work, and strengthens the understanding of the planning context by highlighting the strategic issues facing Naryn Town that emerge from the analyses. This provides an evidence base from which the strategic spatial planning and recommendations, and capital investment planning activities can be developed. This report is not a final understanding of the town and its challenges. Instead, it attempts to provide a basis of understanding, from which additional, more detailed and nuanced challenges can be identified and investigated further in the next stage of the project. The challenges identified in this report will be further validated through a series of participation exercises and workshops to identify additional data gaps and potential future impactful projects and interventions.

## GIS Analysis

**This report uses a number of spatial analyses and modelling approaches to provide a diagnosis for how well the city is functioning for its citizens.**

These are organised within five city objectives which ensure that each indicator used, links directly with the Sustainable Development Goals and New Urban Agenda.

**These five objectives include Compactness, Connectedness, Inclusiveness, Vibrancy, and Resilience.**

Through these analyses, deficits or challenges that the city faces can be identified in a spatial manner, and resolutions taken up during the planning and transforming phases of the project are able to be assessed and monitored in an informed way. The following explains the kind of analysis found within each city objective, the outcomes for these analyses and gives an example of the way indicators are used in the approach to the spatial analysis.

Supplementary to these spatial analysis, the explanatory figures by sub-districts are provided. These figures able understanding spatial distribution of any aspect by hexagons within the sub-districts, representing variations of indicators along the space.

## Compact City



This objective includes indicators to analyse the efficient and effective use of land in relation to the population and built-up densities in the city. It helps to identify where provision of, and proximity to social facilities and infrastructure networks can be enhanced to create a more Compact City.

It includes analyses such as:

- Urban Density (Population and Built-Up)
- Infrastructure Network Provision
- Proximity to Key Services
- Proximity to Variety of Uses

**An example of a Compactness analysis would be:**

Built-Up Area Density

This analysis provides an indication of how efficiently and effectively the land is being used in the city. It uses the building footprint, and building height as evidence for the volume of built-up area in each neighbourhood. This analysis can highlight underused areas, and, when overlaid with information on key service and infrastructure network provision and proximity, and the variety of uses within a certain area, may indicate potential land for infill development. Well-utilised land is thus distributed efficiently and effectively through the city.

## Connected City



This objective includes indicators to analyse how easy it is to move within the city. It assesses the efficiency of the road and public transport network, and how accessible (and thus, effective) the transport network is for the city's population.

It includes analyses such as:

- Street Network Distribution
- Road Network Permeability
- Public Transport Network Provision
- Public Transport Stops Opportunity Access

**An example of a Connectedness analysis would be:**

Accessibility & Walkability Analysis

When considering opportunity to access, the analysis identifies whether the location of facilities (for example bus stops) are equitably distributed in the city for people to access within a 5, 10, 15, 20 or 20+ minute walking distance. A walking distance considers not only the locational proximity of the facility, but also the street network around it (for example, number of intersections, assessing permeability). By understanding the number of people that can or cannot access a facility within a certain walking distance, new facilities can be prioritised in relation to its most beneficial location along street and road networks, and the population that it can serve in that area.



## Inclusive City



This objective analyses equitable provision and distribution of public services (public and green space), social services (health, education, cultural), and essential services (water, sewage, electricity). This is assessed in relation to population and helps identify areas of poor or underutilised services.

It includes analyses such as:

- Utility Service Access
- Equitable Service Provision
- Equitable Service Access

**An example of an Inclusiveness analysis would be:**

Capacity and Closest Facility Analysis

When considering that most people would choose to use facilities closest to them, this analysis helps to understand the capacities of facilities to serve in relation to their demand (high or low). This helps to identify and prioritise development to expand existing facilities, or develop new ones, where capacity is constrained. Alternatively, the analysis can also highlight facilities that are able to take on more capacity than their current service area draws in, for example, in an area where population density is low. Here it highlights the inefficiencies of facilities and opportunities for improved connectivity to the facility with better road networks, or areas of potential densification.

## Vibrant City



This objective includes analyses that help to identify areas of the city likely to see more people and more activities in the street and public spaces. Vibrancy is assessed in relation to the diversity and interaction of activities, and the way people interact with those activities as they move through an area.

It includes analyses such as:

- Activities Agglomeration
- Pedestrian Movement Density

**An example of a Vibrancy analysis would be:**

Shortest Path Analysis

This analysis can help identify the efficiency of the population's movement between areas, and between activities, highlighting areas that may already have high pedestrian flows, that could further benefit from development of economic land uses. It could also highlight opportunities in areas where there is a good mix of activities and high pedestrian movement for improved pedestrian environments (potentially enabling further vibrancy).

## Resilient City



Although all analyses relate to resilience, this objective is specifically concerned with understanding the city's preparedness, and ability to respond to natural hazards and risks.

It includes analyses such as:

- Household Income Sensitivity
- Hazard exposure

**An example of a Resilience analysis would be:**

Areas at Risk from Hazards

From an analysis of the people and infrastructure at risk in the event of a natural hazard, responsive interventions can be prioritised to mitigate or adapt. The analysis considers the exposure of infrastructure in quantity (length) for example, water and sewage pipelines, roads etc., and number (for e.g. water pumps, electric pylons etc.). By overlaying population and hazard data, areas with the highest density of population at risk can be identified, and appropriate mitigation measures can be prioritised for these areas.

## 2. Introduction

Naryn's unique geographical and socio-economic context plays a pivotal role in shaping its development trajectory. Situated in the Kyrgyz Republic, a Central Asian country spanning 199,900 square kilometres (ranking 85th globally by territorial size),<sup>5</sup> Naryn exemplifies the region's dramatic topography. The Kyrgyz Republic is predominantly mountainous, with an average elevation of 2,750 metres above sea level, ranging from a peak of 7,439 metres to a low of 401 metres. Over 94% of the country lies above 1,000 metres, and Naryn itself is located at an altitude exceeding 2,000 metres, resulting in a challenging climate and terrain that significantly influence development prospects.

The Kyrgyz Republic is a landlocked country, located farthest from any ocean compared to other countries. Its diverse natural features include approximately 2,000 lakes, covering a total of 7,000 square kilometres, with Issyk-Kul, Son-Kul, and Sary-Chelek being the most prominent. The Syr Darya River, one of Central Asia's major transboundary rivers, originates in the high reaches of the Tian Shan Mountains as the Naryn River, flowing westwards before merging with the Kara Darya in Uzbekistan. These hydrological features not only shape the natural environment but also influence agriculture, and regional cooperation.

Despite the fact that 56% of the Kyrgyz Republic's land is classified as agricultural, only a limited portion is suitable for crops due to the harsh climatic and topographical conditions. Over 90% of the country is above 1,000 metres, and 40% exceeds 3,000 metres, with 4%

<sup>5</sup> Administrative-territorial structure of the Naryn oblast. (n.d.). <https://old.mfa.gov.kg/contents/view/id/89>

covered by permanent snow and ice. Most agricultural land is better suited to livestock grazing, often located far from year-round rural settlements. Forests, covering just 4% of the total land area, are sparse, further constraining livelihood opportunities. In Naryn, these geographic and climatic realities directly impact living conditions, livelihoods, and exposure to environmental risks, highlighting the need for tailored, resilient development strategies.

The Kyrgyz Republic shares borders with Kazakhstan to the north, Uzbekistan to the southwest, Tajikistan to the south, and China to the east and southeast.<sup>6</sup> Naryn, strategically located between the capital city Bishkek and the People's Republic of China, serves as a critical connection point for regional and international trade. It

<sup>6</sup> National Statistical Committee of the Kyrgyz Republic. (2007). Kyrgyzstan. Figures and facts. 2002-2006. <https://www.stat.kg/rus/News/kniga.pdf>



Figure 4. Geographical context of Naryn City

is also a key intermediary between secondary towns in the southern regions of the country. As such, the development of Naryn has implications not only for its local context but also for broader regional and national development goals.

The Naryn Oblast, spanning 45,200 square kilometres, occupies the central part of the country within the Tien Shan Mountain range, making it the most mountainous oblast in Kyrgyzstan. It borders Issyk-Kul Oblast to the east, Chüy Oblast to the north, Jalal-Abad and Osh Oblasts to the west, and China to the south.<sup>7</sup> Naryn Town, the administrative centre of the oblast, is a vital regional hub for cultural, educational, administrative, commercial, and industrial activities.

Naryn Town's development is influenced by its linear layout, which follows the Naryn River and is bounded

<sup>7</sup> About Naryn oblast. (n.d.). <https://www.gov.kg/ru/region/naryn>

by mountains on either side. The town's northern edge is bordered by the river, but urban growth has occurred on both sides, constrained by natural hazards in certain areas. The town is traversed by a primary arterial route (Lenin Street), along with one regional and one internationally significant road running north-south, underscoring its logistical importance.

A range of urban planning and development initiatives are underway in Naryn, supported by community engagement and existing sectors such as tourism and agriculture. Positioned five hours from Bishkek, the town demonstrates significant potential for sustainable growth. International partnerships have catalysed substantial investment in the region, including the establishment of the University of Central Asia's campus (inaugurated in 2016), the School of Professional and Continuing Education (SPCE) learning centre, and infrastructure rehabilitation programmes for water and

wastewater facilities funded by SECO and the EBRD.<sup>8</sup>

Adopting an integrated and cross-scalar approach to assess Naryn's spatial, legislative, economic, and financial landscapes is critical to identifying barriers and opportunities for transformative change. This holistic perspective enables targeted recommendations to enhance resilience and sustainable growth, ultimately benefiting the people of Naryn.

The following sections of this report provide a thematic and interrelated assessment of Naryn's development opportunities, culminating in spatial and non-spatial recommendations aimed at fostering inclusive and resilient urban growth.

---

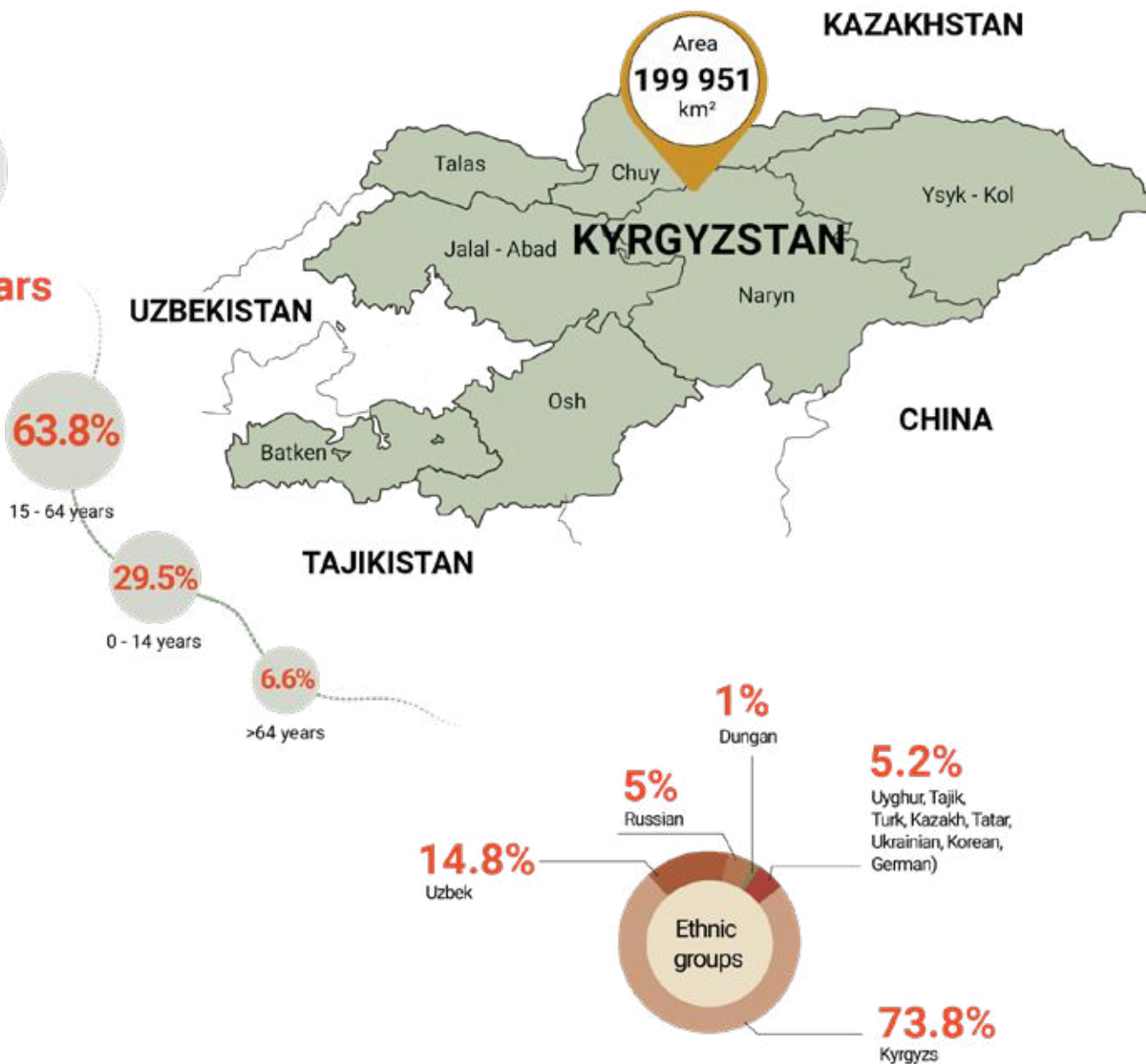
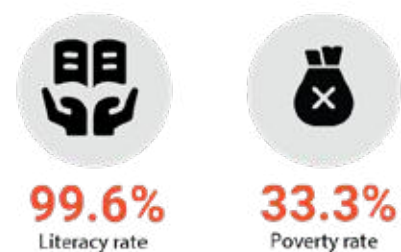
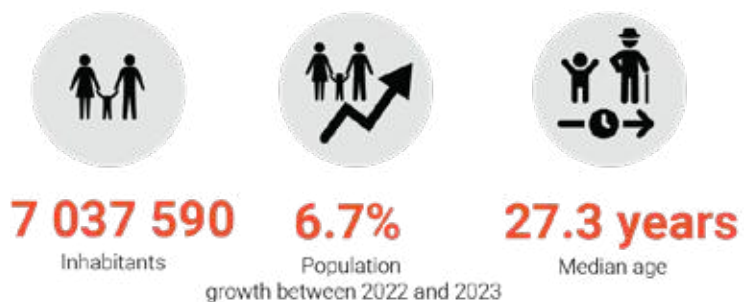
<sup>8</sup> Project for improved wastewater and water services (includes both capital investment and technical assistance from the Government of Switzerland and the European Bank for Reconstruction and Development, initiated in 2020)



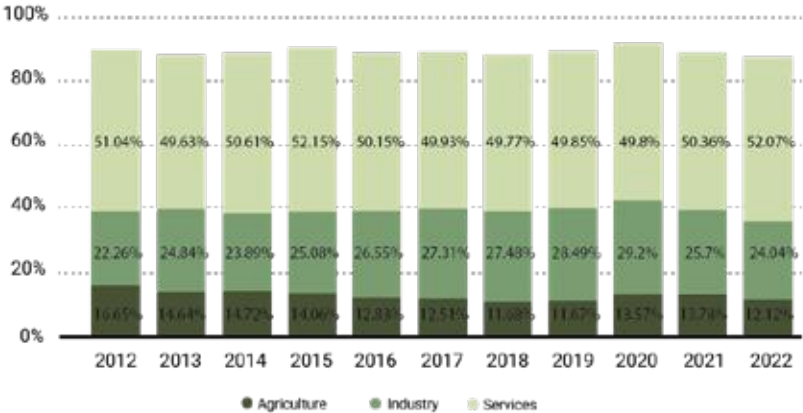
Naryn, Kyrgyzstan Photo © UN-Habitat

# KYRGYZSTAN

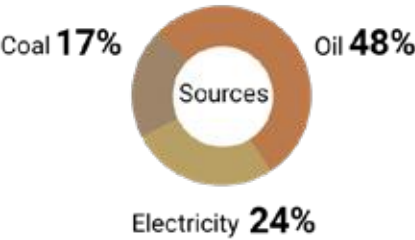
## POPULATION



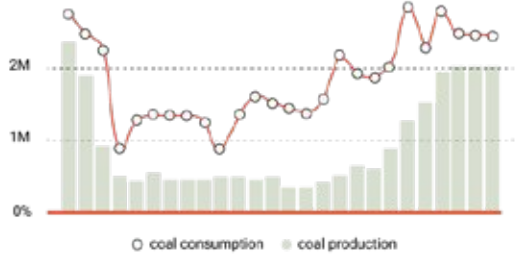
## ECONOMIC ACTIVITY



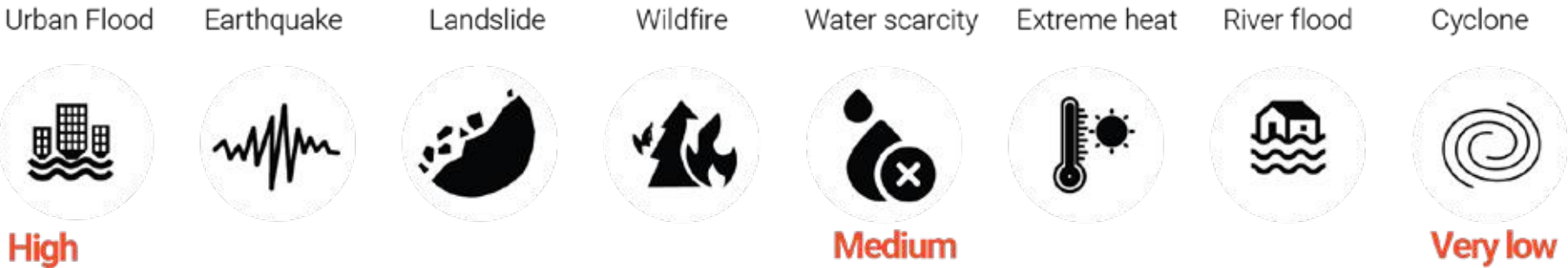
## ENERGY



## COAL RESERVES



## HAZARDS





# NARYN REGION

## POPULATION



**308400**

Inhabitants



**7.3%**

Population  
growth between 2022-2023



**23.5 years**

Median age



Urban

**34.7%**

Rural

**65.3%**



**0.66**

Human  
Development  
Index



**5.8%**

Unemployment  
rate



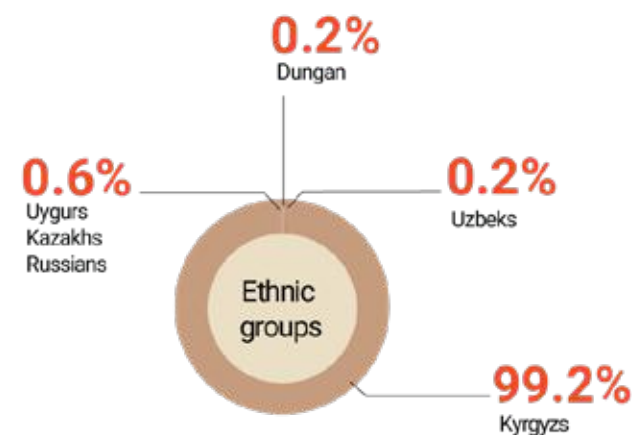
**99.5%**

Literacy rate



**39.9%**

Poverty rate



# ECONOMIC ACTIVITY

**18213**  
mln soms  
total GRP  
(gross regional  
product 2021)

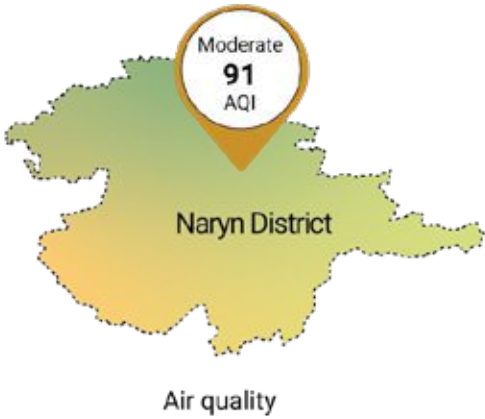
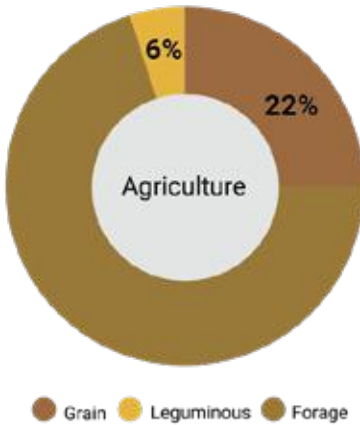
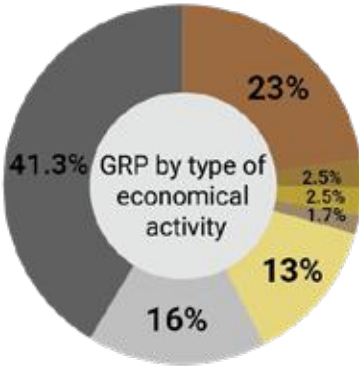
**0.2%**  
Naryn Oblast's  
Contribution to  
National GDP

Key industries:






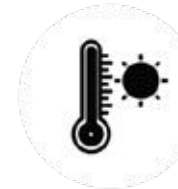


 **Stockbreeding**

**71%** of the cultivated areas  
designated for forage crops

- Agriculture, forestry and fishing
- Mining
- Electricity, gas and steam production, distribution and supply
- Manufacturing
- Construction
- Education
- Others



# HAZARDS

Earthquake	Landslide	Wildfire	Urban Flood	Water scarcity	Extreme heat	River flood	Cyclone
							
<b>High</b>				<b>Medium</b>			<b>Very low</b>

# NARYN CITY

## POPULATION



**41.988**

Inhabitants



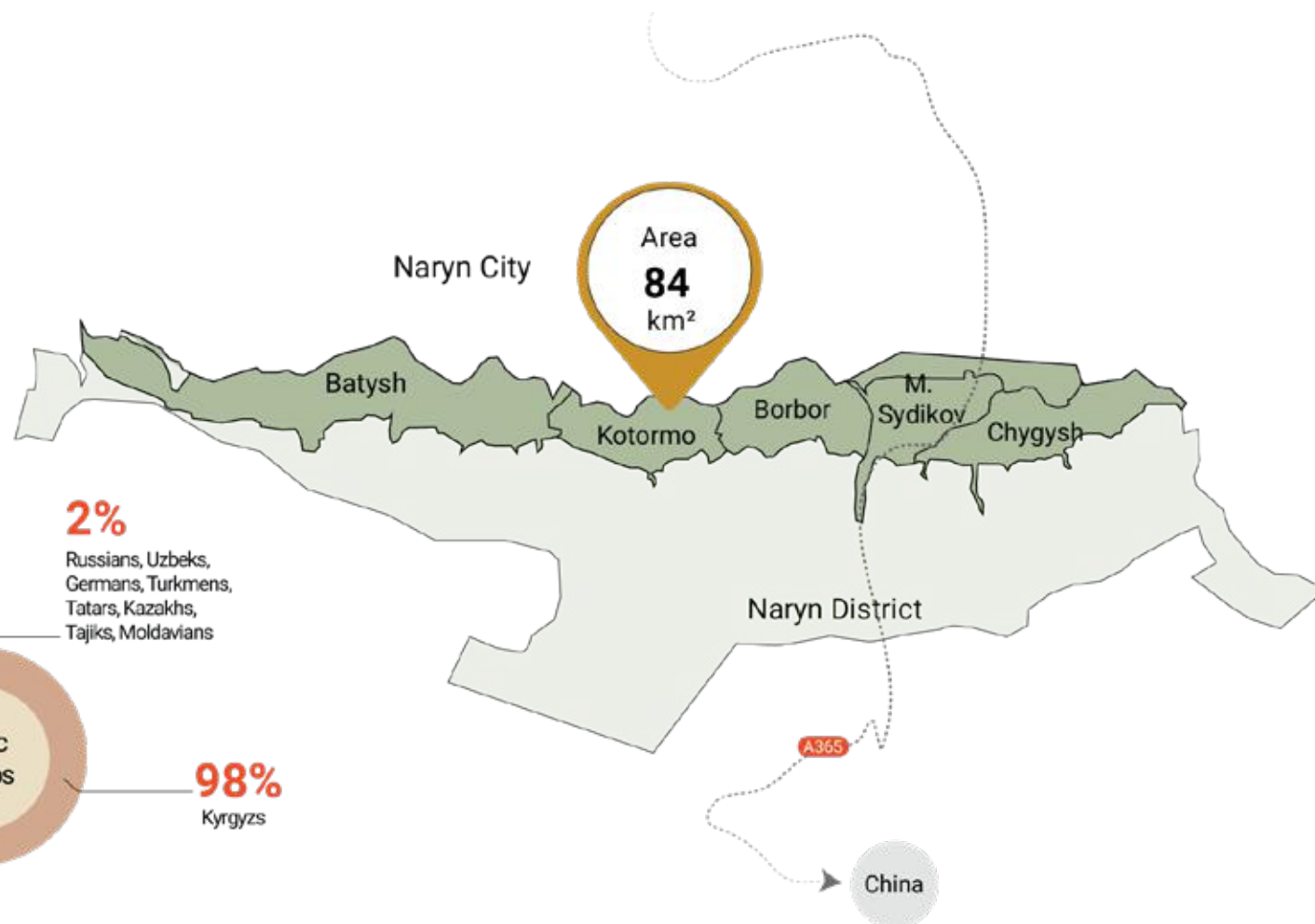
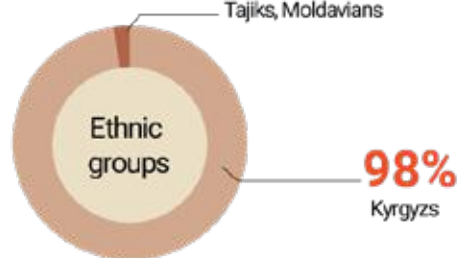
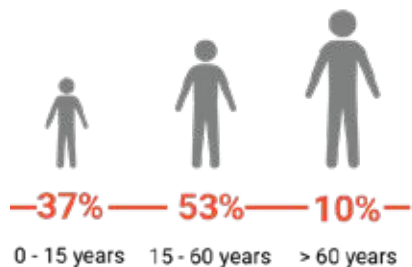
**1.3%**

Population growth annually



**6.7 pph**

Density



## UNEMPLOYMENT



**1253** women

Number of unemployed women registered in the state labor supply



**1229** men

Number of unemployed men registered in the state labor supply



**500** people

Number of unemployed people registered with public service bodies

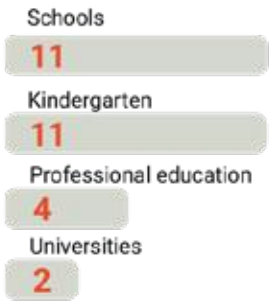
## ECONOMIC ACTIVITY



## ECONOMIC OPPORTUNITIES



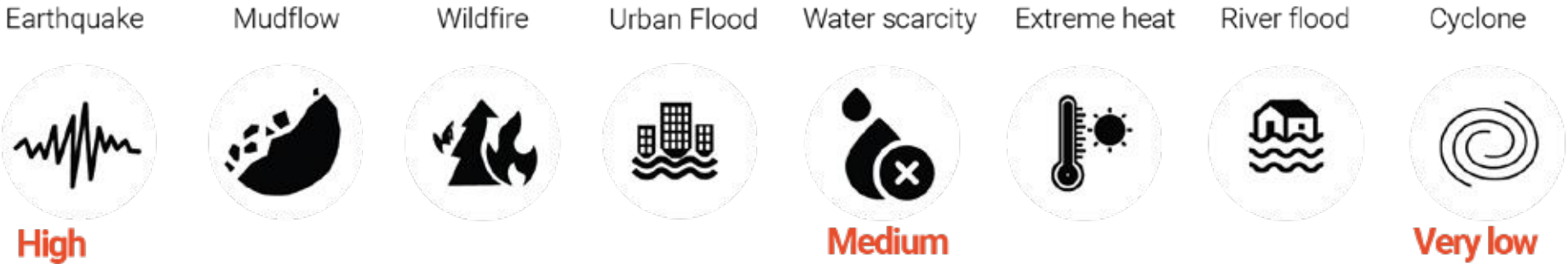
## EDUCATION



## HEALTHCARE



## HAZARDS





### 3. Legislation Context

The legislative context of Naryn is crucial for understanding the opportunities and constraints shaping its ability to achieve integrated, sustainable, and resilient urban development. The city's legislative authorisations, governance structures, and decision-making mechanisms can either facilitate or hinder progress, particularly in areas with localised benefits. For instance, development efforts may be obstructed if local authorities lack sufficient mandates to implement strategies or initiatives.

A robust legislative framework is also essential for Naryn to advance its local priorities for sustainable development while aligning with regional and national goals. This ensures local progress contributes to broader development objectives.

Recognising this, UN-Habitat's Integrated Spatial Planning approach highlights the importance of incorporating the legislative environment into planning processes. Understanding this framework is key to addressing the city's challenges holistically and devising effective, context-specific solutions.

This chapter begins with an overview of the national context, outlining the structure and composition of legislative frameworks. It then examines urban planning authorities in Kyrgyzstan, detailing the governance environment at regional and local levels and the planning instruments and procedures in place.



Naryn, Kyrgyzstan Photo © UN-Habitat



## National Outline

### Geographical Composition; Administrative and Territorial Structure of Kyrgyz Republic and Naryn Oblast

In terms of the administrative-territorial structure, Kyrgyzstan is a unitary state, with a governance framework composed of republic, oblast, district, and local level (cities and villages). Consequently, there are 7 oblasts, 40 districts, 453 aiyl aimaks,<sup>7</sup> and 31 towns and cities (including 2 cities of national significance, 12 cities of regional significance, and 17 towns of district significance), and 9 urban-type settlements.<sup>8</sup> At the primary level, there are two cities of national significance, Bishkek and Osh, along with 7 oblasts: Batken oblast (with Batken village as its administrative center), Jalal-Abad oblast (centered in Jalal-Abad city), Issyk-Kul oblast (with Karakol city as its center), Naryn oblast (centered in Naryn Town), Osh oblast (with Osh city as its center),

7 *Program of the Government of the Kyrgyz Republic for the Development of General Plans for Settlements of the Kyrgyz Republic for 2018-2025*. (2017). <http://cbd.minjust.gov.kg/act/view/ky-kq/100223/10?cl=ru-ru&mode=tekst> The indicated number may be less (around 417) due to the consolidation of aiyl aimaks in the Naryn oblast in 2023 – Decree of the President of the Kyrgyz Republic No. 85 “On administrative-territorial reform at the level of aiyl aimaks of the Naryn oblast of the Kyrgyz Republic in pilot mode.” (2023, April 3). <http://cbd.minjust.gov.kg/act/view/ru-ru/434926?cl=ru-ru>. The cited document dates 2017.

8 *Program of the Government of the Kyrgyz Republic for the Development of General Plans for Settlements of the Kyrgyz Republic for 2018-2025*. (2017). <http://cbd.minjust.gov.kg/act/view/ky-kq/100223/10?cl=ru-ru&mode=tekst>

Chüy oblast (centered in Tokmak city), and Talas oblast (centered in Talas city). The second tier of administrative-territorial division includes inner-city districts in Bishkek and Osh, 40 districts spanning the 7 oblasts, and 12 cities of regional significance. The third tier comprises 453 aiyl aimaks<sup>9</sup> in 40 districts (aiyl aimaks, including subordinate aiyls), 17 cities of district significance, and 9 urban-type settlements.<sup>10</sup>

The Naryn oblast comprises 5 districts, a city of regional significance – Naryn Town, and, as of 2023, 27 aiyl aimaks<sup>11</sup> (each encompassing one or more aiyls)<sup>12</sup>, namely:

- Ak-Talaa district (centered in Batovo village) – 4 aiyl aimaks.
- At-Bashy district (centered in At-Bashy village) – 5 aiyl aimaks.
- Jumgal district (centered in Chaek village) – 6 aiyl aimaks.

9 *Program of the Government of the Kyrgyz Republic for the Development of General Plans for Settlements of the Kyrgyz Republic for 2018-2025*. (2017). <http://cbd.minjust.gov.kg/act/view/ky-kq/100223/10?cl=ru-ru&mode=tekst> The indicated number may be less (around 417) due to the consolidation of aiyl aimaks in the Naryn oblast in 2023 (Decree of the President of the Kyrgyz Republic No. 85) <http://cbd.minjust.gov.kg/act/view/ru-ru/434926?cl=ru-ru>. The cited document dates 2017.

10 National Statistical Committee of the Kyrgyz Republic. (2007). *Kyrgyzstan. Figures and facts. 2002-2006*. <https://www.stat.kg/rus/News/kniga.pdf>

11 (Following a consolidation of aiyl aimaks in the Naryn oblast in 2023) - Decree of the President of the Kyrgyz Republic No. 85 “On administrative-territorial reform at the level of aiyl aimaks of the Naryn oblast of the Kyrgyz Republic in pilot mode.” (2023, April 3). <http://cbd.minjust.gov.kg/act/view/ru-ru/434926?cl=ru-ru>

12 *Administrative-territorial structure of the Naryn oblast*. (n.d.). <http://kg-eu.mlsp.gov.kg/1-6.html>

- Kochkor district (centered in Kochkor village) – 5 aiyl aimaks.
- Naryn district (centered in Naryn Town) – 7 aiyl aimaks.

Figure 5 shows the administrative and territorial division of the Kyrgyz Republic. This intricate structure showcases the diversity of Kyrgyz governance as a structured system designed to address the needs of its diverse regions. The tiered approach, from the national level down to the local aiyl aimaks, ensures a comprehensive approach to governance across the country.

### Governmental Structure at the National Level

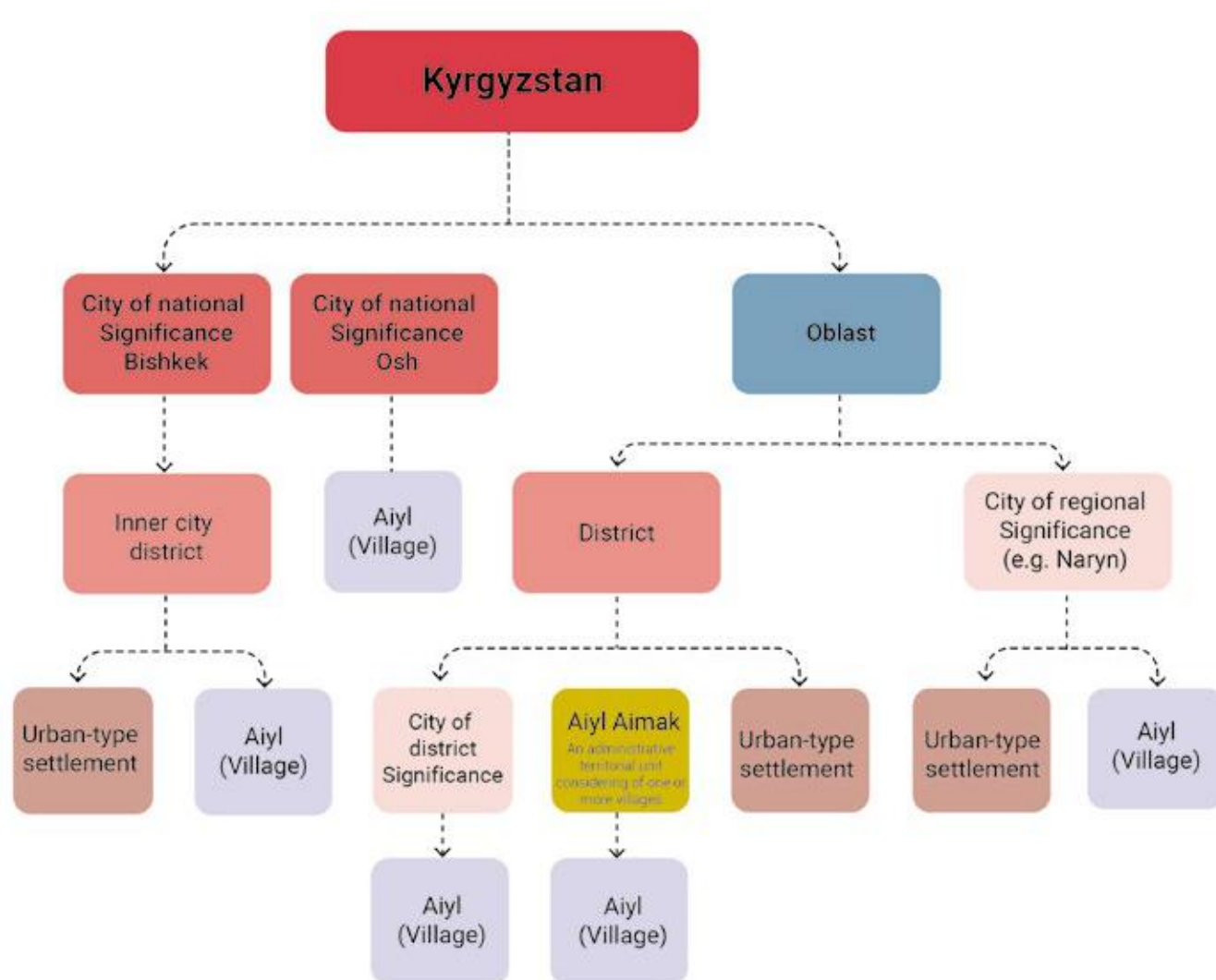


Figure 5. Administrative and territorial division of the Kyrgyz Republic

Two years after declaring independence (in 1991), the unicameral Parliament of the Kyrgyz Republic – known as the Supreme Council (Zhogorku Kenesh) – formally adopted the Constitution of the Kyrgyz Republic by Law No.1186-XII.<sup>13</sup> As of the time of this analysis, the constitution has been periodically amended, with one of the pivotal moments occurring in 2010 when the country transitioned from a presidential republic to a parliamentary one. The most recent constitutional referendum, which took place in 2021, considered changes to the constitutional structure.<sup>14</sup> Based on its outcomes, Kyrgyzstan shifted from a parliamentary-presidential system back to a presidential form of governance,<sup>15</sup> in a restructured manner.

According to the 2021 Constitution, the president serves as the head of state, and leads the executive branch of the Kyrgyz Republic – the Cabinet of Ministers. Article 70 of the 2021 Constitution outlines an extensive array of the president's powers, including the authority to establish the structure and composition of the Cabinet of Ministers, among other responsibilities. The Chairman of the Cabinet of Ministers (Prime Minister) is the head of

<sup>13</sup> *Administrative-territorial structure of the Kyrgyz Republic.* (n.d.). <http://kg-eu.mlsp.gov.kg>

<sup>14</sup> *History of the Constitution of the Kyrgyz Republic.* (2021). <https://constpalata.kg/konstitucziya-kr/>

<sup>15</sup> *Constitution of the Kyrgyz Republic.* (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112213?cl=ru-ru>

the Presidential Administration. The Cabinet of Ministers includes 16 ministries, 1 state committee, 5 state agencies (form a part of administrative establishments such as state agencies, public services, and state inspections operating in relevant fields of activity)<sup>16</sup>, and 1 social fund.<sup>17</sup> Also, authorized representatives and local state administrations are subordinate to the Cabinet of Ministers (their powers are disclosed in **Regional and Local Outline section**). The full structure of the executive authorities is depicted in the diagram alongside.

Legislative powers are entrusted to the Supreme Council (Zhogorku Kenesh) which is the highest representative body exercising legislative power consisting of, among others, passing laws and providing their official interpretation.<sup>18</sup> The judicial power in the Kyrgyz Republic is exclusively held by the judiciary, which includes judges from the Constitutional Court, the Supreme Court, local courts (courts of first instance: district courts, administrative courts, district courts in the city, city courts; and courts of

16 Article 1 of the Law "On the Cabinet of Ministers of the Kyrgyz Republic". (2021) <http://cbd.minjust.gov.kg/act/view/ru-ru/112301?cl=ru-ru>

17 Ministries and Establishments of the Cabinet of Ministers of the Kyrgyz Republic: <https://www.gov.kg/ru/gov/s/2>

18 Law "On the Regulations of the Jogorku Kenesh of the Kyrgyz Republic". (2022) <http://cbd.minjust.gov.kg/act/view/ru-ru/112437?cl=ru-ru>

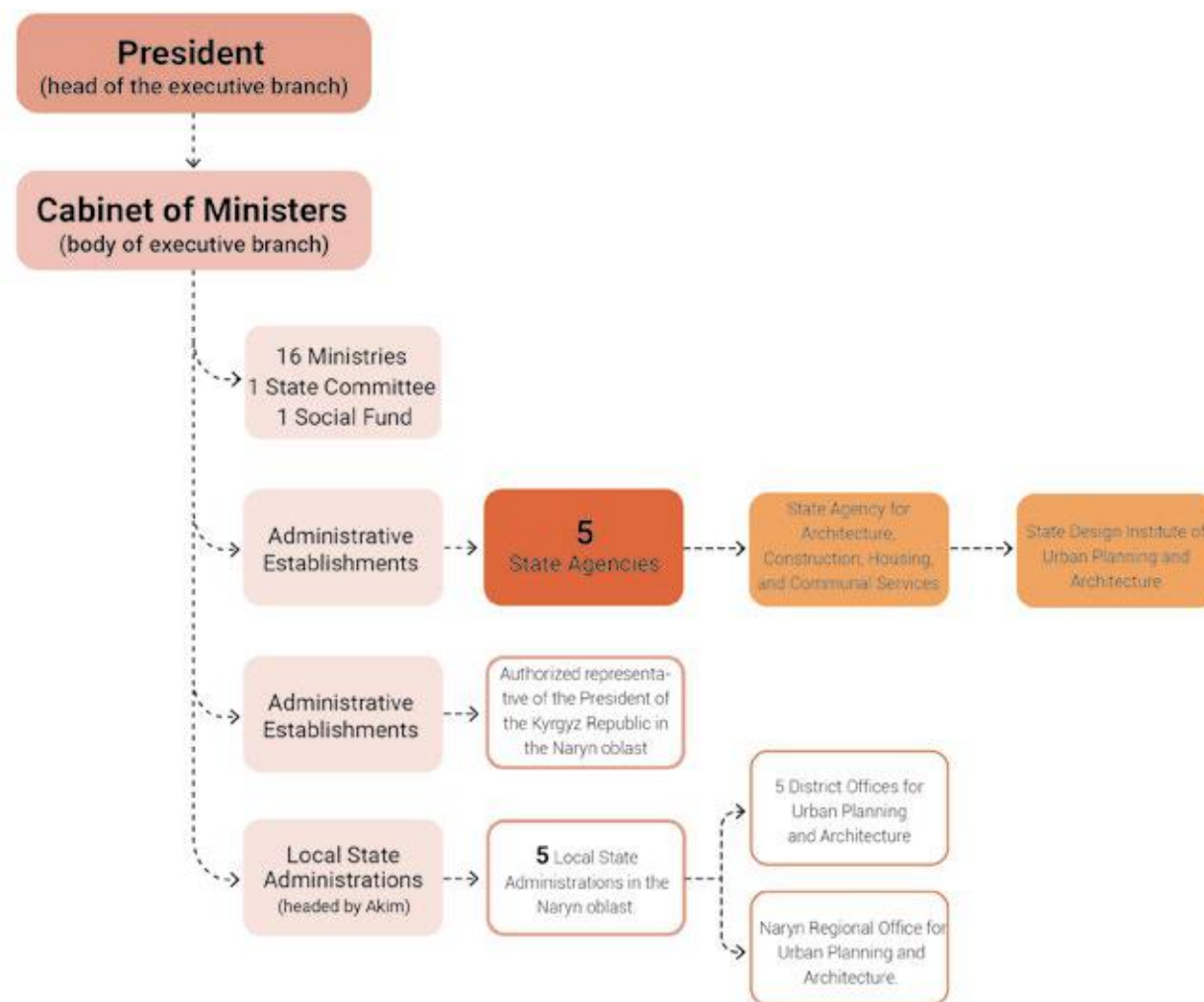


Figure 6. System of Executive Authorities in the Kyrgyz Republic



second instance: regional courts, Bishkek City Court),<sup>19</sup> and specialized courts established in accordance with the law.<sup>20</sup> As of 2023, military courts of garrisons and military courts of the Kyrgyz Republic exist as specialized courts, although they form a system of general courts.<sup>21</sup> In the 2012 Children's Code, a provision to establish a specialized court for juvenile cases is provided, however, it has not been actioned.<sup>22</sup>

## Urban Planning Authorities of

19 Law "On the Supreme Court of the Kyrgyz Republic and Local Courts". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112315>

20 Law "On the status of judges of the Kyrgyz Republic". (2021). [http://cbd.minjust.gov.kg/act/view/ru-ru/112311#:~:text=Судебная%20власть%20per%20в%20Кыргызской%20Республике,Республики%20\(далее%20%D0%20местные%20суды\)%3B](http://cbd.minjust.gov.kg/act/view/ru-ru/112311#:~:text=Судебная%20власть%20per%20в%20Кыргызской%20Республике,Республики%20(далее%20%D0%20местные%20суды)%3B)

21 Dikov, G., Talapina, E., Yursena, L., Kalchenko, S., & Baglay, K. (2015). *Judicial system of Central Asia. A Comparative Overview*. <https://www.venice.coe.int/images/SITE%20IMAGES/Publications/CApublication.pdf>

22 *Children's Code of the Kyrgyz Republic*. (2012). <http://cbd.minjust.gov.kg/act/view/ru-ru/203700>

## Kyrgyzstan

Similar to the overarching power structure in Kyrgyzstan, the urban planning framework reflects comparable intricacies and hierarchical arrangements. It mirrors the broader national governance model characterized by a vertical hierarchy and a strategic allocation of roles and responsibilities.

According to the Resolution of the Cabinet of Ministers No.44 of June 2021 the State Agency for Architecture, Construction and Housing and Communal Services (hereinafter referred to as "Resolution No.44 of June 2021") is an administrative body that carries out the functions of an executive authority in the field of architectural and construction activities, housing and communal services, drinking water supply and sanitation.<sup>23</sup> Its main responsibilities include:

- Representing the Kyrgyz Republic in its interactions with international organizations in regulated sectors and ensuring the fulfilment of obligations arising from international treaties to which the Kyrgyz Republic is a party.

23 *Resolution of the Cabinet of Ministers "State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic"*. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/158344?cl=ru-ru>

- Ensuring compliance with the requirements of regulatory legal acts and technical regulations within the realm of architectural and construction activities.
- Implementing intersectoral coordination and regulation in the development of state technical regulations, as well as creating and approving building codes and regulations related to architectural and construction activities. This includes standards, land plot selection for all types of construction, geotechnical surveys, design, architecture, urban planning, construction, building materials, products, and structures, as well as the development of housing, communal services, drinking water supply, and sanitation.
- Executing measures for the construction, restoration, and rehabilitation of social construction facilities and drinking water supply and sanitation systems, funded by the national budget, international projects, and other sources that comply with the laws of the Kyrgyz Republic.<sup>24</sup>

Furthermore, the remit of the State Agency for Architecture, Construction, Housing, and Communal Services encompasses various responsibilities. These

24 *Resolution on the State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic*. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/158345?cl=ru-ru>

duties entail the formulation of sector-specific policies, regulatory oversight, coordination, supervision, and enforcement, as well as the provision of public services and support, including activities such as monitoring and forecasting. These functions are elaborated upon in detail within paragraph 4 of the Regulations of the State Agency for Architecture, Construction, Housing, and Communal Services, as ratified by Resolution No.44 in June 2021.

The State Agency for Architecture, Construction, Housing, and Communal Services is headed by the Director and four Deputy Directors who are responsible for each of their work area as shown in the diagram. Furthermore, within each of the 7 oblasts and the city of Bishkek, there are distinct urban planning and architecture authorities that are subordinated to the State Agency for Architecture, Construction, Housing, and Communal Services. For instance, in the Naryn oblast, there are 5 District Offices for Urban Planning and Architecture, along with one Naryn Regional Office for Urban Planning and Architecture.<sup>25</sup> Currently, the Naryn District Office for Urban Planning and Architecture and the Naryn Regional Office for Urban Planning and Architecture are headed by the same person.<sup>26</sup>

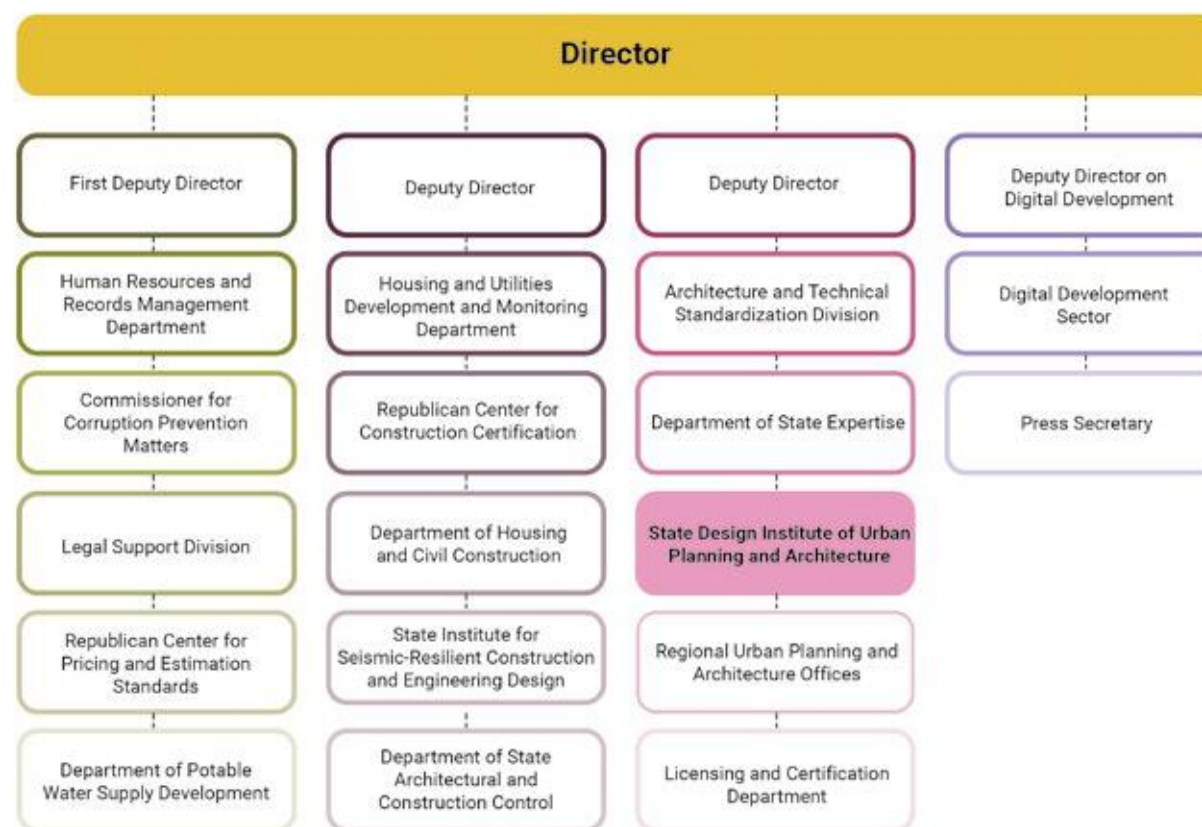


Figure 7. Structure of the State Agency for Architecture, Construction, Housing and Communal Services

<sup>25</sup> **Territorial authorities of architecture and urban planning in Naryn Oblast.** (n.d.). <https://gosstroy.gov.kg/ru/departments/60/show>

<sup>26</sup> Based on the interview conducted on October 30, 2023, in Naryn, Kyrgyzstan.

As Figure 7 shows, within the State Agency for Architecture, Construction, Housing, and Communal Services, there is a specialized institution responsible for urban planning matters in Kyrgyzstan, known as the State Design Institute of Urban Planning and Architecture (figure 8) whose functions include:

- Development of urban planning documents, technical regulations, standards, and other technical documentation, as well as the creation, management, and oversight of architectural and urban planning cadastres, especially in the development of resort-recreational areas.
- Conducting scientific and informational activities and the dissemination of scientific and technical achievements in the field of architecture and urban planning, as well as engineering systems.
- Working on theoretical aspects of city reconstruction, towns, and resort-recreational areas.
- Participation in the development of international cooperation for the Kyrgyz Republic in the field of architecture and urban planning.
- Development of general plans and detailed planning projects for settlements and resort-recreational areas.
- Carrying out author supervision in accordance with established procedures for construction and

development based on the project documentation developed by the Institute.

- Implementing scientific and technical achievements in the fields of architecture and urban planning, regional planning, and engineering construction into housing and civil construction.
- Developing experimental projects.
- Developing projects for complexes, individual buildings and constructions, residential buildings, and various other types of facilities
- Coordinating urban planning documentation developed by other licensing entities to ensure compliance with regional planning projects and previously developed urban planning documents.
- Conducting expertise of licensing entities intending to develop urban planning documentation.<sup>27</sup>

All the workshops mentioned here (figure 8) contribute equally to the overall urban planning and architecture initiatives within Kyrgyzstan. However, Workshop No.1

<sup>27</sup> **Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic.** (n.d.). <http://gpi.kg/ru/ustav/>

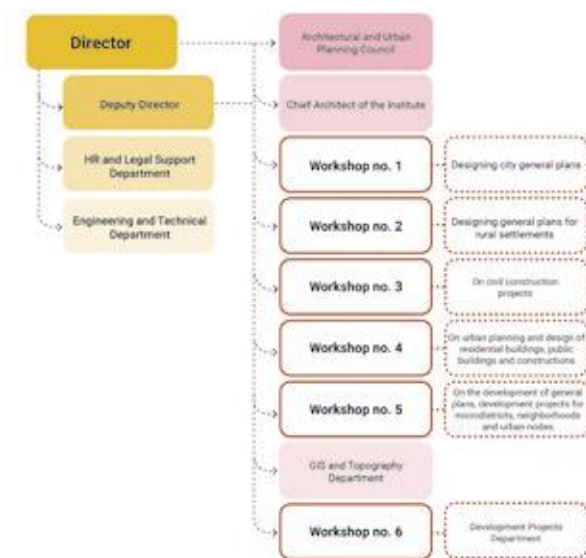


Figure 8. Structure of the State Design Institute of Urban Planning and Architecture (Source: GPI)

holds a distinct responsibility of overseeing the drafting of general plans, detailed planning drafts, and city construction projects for the Kyrgyz Republic. This workshop specializes in the development of theoretical concepts related to the reconstruction of cities and resort-recreational zones. Additionally, it plays a crucial role in ensuring the compatibility of urban planning documents produced by other licensing entities with district planning projects and schemes, along with previously established urban planning documents. This dual focus underscores Workshop No.1's pivotal role in shaping and coordinating essential aspects of urban development and architecture within the Kyrgyz Republic.<sup>28</sup>

Beyond the central institute, the organization extends its reach through two specialized branches: the Osh Branch and the Issyk-Kul Branch specializing in resort and recreational complexes. The Osh Branch structure, depicted in Figure 9, operates as an integral part of the institute's network, carrying out urban development activities locally.

The Issyk-Kul Branch is dedicated to advancing research in promising fields of architecture and urban planning, particularly focusing with a particular focus on the development of resort and recreational areas. Specializing in the creation of schemes and detailed planning projects for resort and tourist complexes, the

branch plays a crucial role in shaping the architectural landscape of these regions. Furthermore, it excels in the formulation of project planning and cost estimate documentation for various facilities within the scope of resorts, including sanatoriums, tourism establishments, and recreational sites. As part of its comprehensive approach, the branch undertakes topogeodetic and engineering-geological work, contributing significantly to the development and enhancement of resort and recreational areas. Through these specialized efforts, the Issyk-Kul Branch actively contributes to the sustainable and aesthetically pleasing evolution of the region's architectural and urban planning endeavours.<sup>29</sup>



Figure 9. Structure of the Osh Branch of the State Design Institute of Urban Planning and Architecture (Source: GPI)

The organizational structure coupled with the strategic establishment of regional branches, positions the State Design Institute of Urban Planning and Architecture

28 *Workshop No.1 on Designing City General Plans.* (n.d.). <http://gpi.kg/ru/masterskaya-1/>

29 *Issyk-Kul Branch specializing in resort and recreational complexes.* (n.d.). <http://gpi.kg/ru/issyk-kulskij-filial/>



**In summary, the following findings can be identified for the national level:**

as a dynamic and multifaceted entity, well-equipped to contribute to the sustainable development and aesthetic enhancement of urban spaces throughout Kyrgyzstan.

Thus, Kyrgyzstan is emerging as a highly centralized country where the main powers in, specifically, urban planning, are concentrated on the national level. The State Agency for Architecture, Construction, Housing, and Communal Services serves as a key driver in shaping and implementing policies related to architectural and construction activities, housing, and communal services.

The establishment of the State Design Institute of Urban Planning and Architecture further underscores this centralization, as it takes on a multitude of responsibilities, ranging from the development of planning documents to the coordination of licensing entities and the implementation of scientific and technical achievements.

With a structured hierarchy and specific roles designated within the agency, Kyrgyzstan's urban planning framework reflects a concerted effort to streamline decision-making and governance at the national level.

## Regional and Local Outline

The governmental structure of the Kyrgyz Republic is





marked by a vertical hierarchy, where tasks, functions, and powers are delineated at all levels. Further, this section will analyse the level of state involvement at the regional and local levels, as well as the scope of functions of the local self-government. The section is also illustrated with examples from the Naryn oblast to highlight the practical side of the analysis.

## Governmental Structure

Currently, a vertical structure characterizes the executive branch of the government in the Kyrgyz Republic. Clear delineations of tasks, structure, functions, powers, and inter-branch relationships have been established at all levels.

Therefore, each oblast is headed by an authorized representative (governor). Between 2012 and 2021, Kyrgyzstan established a body comprising authorized representatives of the Government of the Kyrgyz Republic in the oblasts.<sup>30</sup> This body operated under the supervision and accountability of the Prime Minister of the Kyrgyz Republic. Its responsibilities included coordinating and supervising the activities of state authorities, law enforcement agencies, and local state administrations within their respective regions. Furthermore, it engaged in joint development with local state administrations and local self-government bodies

to create comprehensive programs for the development of regional territories. The institution also played a key role in organizing initiatives to attract investments into the regional economy.<sup>31</sup> With a shift of powers from the parliamentary-presidential system back to a presidential form of governance, by the decree of the President of the Kyrgyz Republic dated July 15, 2021, No. 302, the institution of authorized representatives of the Government of the Kyrgyz Republic in the oblasts was transformed into the institution of authorized representatives of the President of the Kyrgyz Republic in the oblast. The authorized representative is appointed to the position and dismissed from the position by the President of the Kyrgyz Republic at their own initiative or upon the recommendation of the of the Chairman of the Cabinet of Ministers of the Kyrgyz Republic. They directly report to, and are accountable to the President of the Kyrgyz Republic and the Chairman of the Cabinet of Ministers of the Kyrgyz Republic. Among their powers, representative functions for the respective territory in relations with higher state authorities are notable. This includes proposing appointments and dismissals of heads of local state administrations to the President of the Kyrgyz Republic, in coordination with the Chairman of the Cabinet of Ministers of the Kyrgyz Republic and coordinating the activities of local self-government bodies in executing delegated state powers. The authorized representative of the President of the Kyrgyz Republic in the Naryn oblast was appointed in 2022.

At the district tier, each district is led by the head of the local state administration, known as the “akim” responsible for overseeing the activities of the local state administration. Akim is appointed and dismissed by the President based on a proposal from the Chairman of the Cabinet of Ministers in consultation with the authorized representative of the President in the oblast. The powers of the akim include, among other things, organizing the activities of the local state administration, being responsible for its results, as well as appointing and dismissing heads of the executive bodies of local self-government in aiyl aimaks and cities of district significance. In Naryn oblast, there are 5 local state administrations, corresponding to the number of districts, each headed by the akim. The Naryn shaardyk (town) kenesh is headed by its own Chairman.<sup>32</sup>

## Local Self-Government

At the local level of the Kyrgyz Republic, there is a system of local self-government administered by local communities through the representative body – local keneshes of aiyl aimaks and cities. District keneshes are formed from an equal number of representations of local keneshes of aiyl aimaks and cities situated within the district's territory. Thus, local keneshes oversee the approval of the local budget and a report on its execution, the introduction of local taxes, fees, and benefits for them, as well as establishing the procedure

30 *Resolution “On the Authorized Representative of the Government of the Kyrgyz Republic in the Oblast”*. (2012). <http://cbd.minjust.gov.kg/act/view/ru-ru/95490?cl=ru-ru>

31 *Regulation “On the Authorized Representative of the Government of the Kyrgyz Republic in the Oblast”*. (2012). <http://cbd.minjust.gov.kg/act/view/ru-ru/93691?cl=ru-ru>

32 Naryn City Council. (n.d.). <http://naryn-kenesh.kg>

for the use and disposal of municipal property, among others. District keneshes oversee the approval of the district budget. Each type of keneshes is headed by a respective chairman.

The numerical composition of local keneshes is established considering the population of the corresponding administrative-territorial unit, except for the keneshes of the cities of Bishkek and Osh, where there are 45 deputies in each of the cities. The structure of the city and aiyl keneshes is intricately linked to the population of the administrative-territorial unit, gauged as of January 1 in the election year. This configuration is established as follows: for populations up to 6,000 residents, there are 11 deputies; for populations ranging from 6001 to 20,000 residents, 21 deputies are appointed, and for populations exceeding 20,001, a kenesh is composed of 31 deputies. As for the district keneshes, their composition is intricately tied to demographic considerations as well. The breakdown is as follows: for populations up to 100,000 residents, the kenesh is formed with 20 to 30 deputies; for populations ranging from 100,001 to 200,000 residents, the composition extends to 30 to 45 deputies, and for populations exceeding 200,001 residents, the kenesh consists of 45 to 60 deputies.

The executive body of local self-government in the aiyl aimak is the aiyl okmotu, led by its head. The aiyl okmotu is accountable to the aiyl kenesh in its activities. In the context of urban planning, the aiyl okmotu develops and

#### Local kenesh



Figure 10. Composition of local keneshes in Kyrgyzstan

#### District kenesh

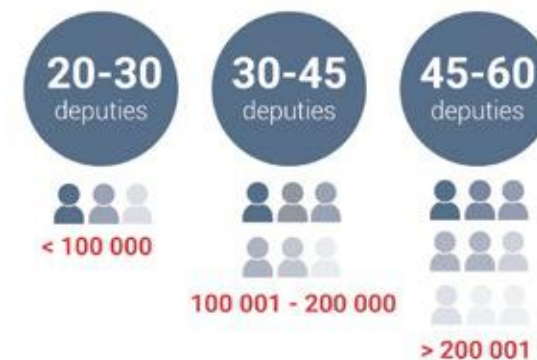


Figure 11. Composition of district keneshes in Kyrgyzstan



implements a general plan for the development of the territory, and monitors compliance with the rules and regulations of architecture and urban planning.<sup>33</sup>

The executive body of local government in the city is the mayor's office, headed by the mayor. Among the mayor's responsibilities, are developing measures for the rational use of city lands and municipal property, participating in the privatization of municipal enterprises, as well as developing and implementing measures for the development of the housing stock, housing and communal services, and improvement of the city. In terms of urban planning, the mayor develops and implements a general plan for the development of the city, and monitors compliance with the norms and rules of architecture and urban planning following the law. The akim appoints mayors of cities of district significance. Mayors of such cities as Bishkek, Osh, and of regional significance are appointed by the President. Consequently, the mayor of Naryn Town, being of regional significance, is appointed by the President of the Kyrgyz Republic.

To expeditiously address local matters in individually located villages within an aiyl aimak, the position of aiyl bashchy may be established by the decision of the local kenesh. They perform functions delegated to them by the decision of the executive body of local

self-government, considering the territorial specifics of the settlement, established customs, and traditions.<sup>34</sup>

Consequently, in 5 districts of Naryn oblast, there are 27 aiyl keneshes<sup>35</sup> and the Naryn Town kenesh.

### Territorial Public Self-Government

In Kyrgyzstan, there is also a level of territorial public self-government – self-organization of citizens at their place of residence – in part of the territory of the aiyl aimak and/or town for independent decision-making and implementation, under their own responsibility, of their own initiatives in matters of local importance. Territorial public self-governance takes place through councils and committees within micro districts, housing complexes, individual houses, streets, and blocks, as well as through communities known as jamaats, and various other forms.

Territorial public self-governance, through its authorized bodies or representatives, possesses the authority to participate in discussions within local keneshes regarding matters concerning the respective territory. Additionally, it

34 Article 59 of the *Law of the Kyrgyz Republic "On Local State Administration and Local Self-Government Bodies."* (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112302>

35 Previously, there used to be 63 aiyl keneshes: [https://shailoo.gov.kg/ru/Kandidaty\\_Talapkerler/Spisok\\_kandidatovTalapkerlerdin\\_tizmesi/dejstvuy-deput-i-kand-v-deput-mestn-ken-2022/mestnye-keneshi-narynskoj-oblasti/](https://shailoo.gov.kg/ru/Kandidaty_Talapkerler/Spisok_kandidatovTalapkerlerdin_tizmesi/dejstvuy-deput-i-kand-v-deput-mestn-ken-2022/mestnye-keneshi-narynskoj-oblasti/) In 2023, there was a consolidation of aiyl aimaks in the Naryn oblast to 27 aiyl aimaks. This information hasn't been confirmed.

is empowered to actively engage in activities related to the improvement, repair, and sanitation of the area. Furthermore, it plays a role in facilitating the implementation of decisions made by local keneshes and their executive bodies. Lastly, territorial public self-governance is responsible for organizing the execution of decisions made during kuruultais and gatherings of citizens<sup>36</sup>.

## Planning Instruments and Procedures

The main laws in Kyrgyzstan regulating to urban planning are the *Law "On Urban Planning and Architecture" of 1994*<sup>37</sup> and the *Law "On the Basics of Urban Planning Legislation of 2011"*.<sup>38</sup> While the first one regulates legal relations in urban planning and architecture and aims to create conditions for the revival, prosperity, and preservation of Kyrgyz

36 Article 57 of the *Law of the Kyrgyz Republic "On Local State Administration and Local Self-Government Bodies."* (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112302>

37 Law of the Kyrgyz Republic *"On Urban Planning and Architecture of the Kyrgyz Republic"* (1994). <http://cbd.minjust.gov.kg/act/view/ru-ru/716>

38 Law of the Kyrgyz Republic *"On the Basics of Urban Planning Legislation of the Kyrgyz Republic"* (2011). <http://cbd.minjust.gov.kg/act/view/ru-ru/203338?cl=ru-ru>

national architecture, the second one sets forth fundamental principles for urban planning and seeks to foster the development of settlement systems within administrative-territorial units. It emphasizes the rational creation of a conducive environment for human activities, effective management of natural resources, and strategic placement of productive forces throughout the territory of the Kyrgyz Republic.

Furthermore, there are two building codes. ***“Planning and Building of Cities and Popular Points of City Type”*** (SN KR 30-01:2020<sup>39</sup>) applies to the design of new and reconstruction of existing urban settlements, and include the basic requirements imposed on the territory of the Kyrgyz Republic, principles and procedures regarding planning, development of cities and urban-type settlements. The ***“Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”*** (SN KR 30-02:2020)<sup>40</sup> determines the basic requirements imposed on the territory of the Kyrgyz Republic for the composition and content of materials, the procedure for development, consideration, coordination and approval of all stages of urban planning documentation.

The hierarchy and development process of urban planning documentation are explained in the text that follows.

### Hierarchy of Urban Planning Documentation

Like the broader urban planning framework in Kyrgyzstan,

39 SN KR 30-01:2020 ***“Planning and Building of Cities and Popular Points of City Type”***. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

40 SN KR 30-02:2020 ***“Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”***. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

the structure of urban planning documents follows a distinct hierarchy, extending from the national level down to the neighbourhood development.

At the national level, the **General (National)**

## National Territorial Planning

**Settlement Scheme**<sup>41</sup> is a comprehensive document that shapes long-term plans and future programs for the Kyrgyz Republic. It establishes state policy on settlement and territorial organization, outlining zones and justifying the organization of territories within key interregional areas. The primary goal is to enhance development in the country by forecasting the placement of productive forces, ensuring ecological balance, and managing interregional infrastructure. This scheme aims to foster holistic urban development, create safe living environments, propose sustainable settlement strategies, and preserve natural and cultural heritage. Additionally, it defines fundamental principles for settlement and territorial organization at the regional level.

At the regional level, the **Regional Resettlement,**

<sup>41</sup> Paragraph 5 of SN KR 30-02:2020 “*Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation*”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

## Regional Territorial Planning

**Environmental Management, and Territorial Organization of Productive Forces Scheme**<sup>42</sup> is designed for economic regions, climatic zones, health resort areas, administrative entities, and border regions. Graphic materials at a scale of 1:100,000-1:300,000, including a modern territory use plan and a comprehensive assessment scheme, are integral components, culminating in the primary drawing known as the General Settlement Scheme. This scheme involves evaluating the region’s resource potential and conducting a thorough territorial analysis to identify development challenges. It also features a long-term forecast for settlement systems, considering regional specifics. Recommendations for state, interregional, and regional infrastructure development, along with measures to preserve the natural and historical-cultural heritage, are included. Throughout its development, the scheme specifies provisions from the General (National) Settlement Scheme, outlining state policy for settlement and territorial organization in the region. It further defines key principles for implementing this policy at the local level.

Another document developed on the regional level, though not forming a part of urban planning documentation, is the **Territorial Integrated**

<sup>42</sup> Paragraph 6 of SN KR 30-02:2020 “*Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation*”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

**Scheme of Nature Protection and Environmental Management**<sup>43</sup> which is developed only for specially protected natural areas with a special regime of environmental management to the territory of environmental emergency zones and zones of environmental disaster. It is developed to create a favourable human environment, to prevent and eliminate pollution and degradation of the natural environment, optimize its properties, and ensure rational environmental management.

At the oblast and district levels, the development of **Regional/District Planning Schemes**<sup>44</sup> aims to establish a rational planning organization for the territory. These schemes focus on shaping social, engineering, transportation, and production infrastructures to create optimal conditions for population settlement. The goal is to foster the development and improvement of the national economic complex while effectively managing the environment through the integrated utilization of land, raw materials, labour, and other resources within the territory. The scheme is developed to

43 Paragraph 7 of SN KR 30-02:2020 *"Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation"*. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

44 Paragraph 8 of SN KR 30-02:2020 *"Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation"*. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

forecast the long-term territory development alongside socio-economic progress, aiming to regulate state-regional interests and local self-governments in urban planning. Implementation requires mutually agreed-upon decisions and collaborative investments. Essential graphic elements, including a comprehensive assessment scheme of the territory, contemporary land use plan, and general plan, are incorporated at a scale of 1:100,000 to 1:50,000. The scheme also includes zoning diagrams, engineering and transportation communication diagrams, and a plan for safeguarding areas from natural and man-made influences, all crafted through collaboration between the developer and the client.

The third tier of urban planning comprises of four

## Local Territorial Planning

types of documents, namely the **General Plan of the Settlement, the General Plan of the territory of Aiyl Aimak, the Detailed Planning Project, and the Project for the Development of Blocks, Microdistricts, and Urban Planning Nodes** (hereinafter referred to as "Development Project").<sup>45</sup> These form a comprehensive framework for urban development, and together, constitute a holistic approach to shaping and organizing urban spaces.

The **General Plan of the Settlement** serves as the primary legal urban planning document. It establishes the directions and boundaries for the settlement's territorial development, functional designation, and construction zoning. It also outlines key decisions related to the placement of citywide significant objects, transport service schemes with urban planning regulation lines, engineering systems, improvement schemes, territory protection from natural and man-made hazards, preservation of natural and historical-cultural heritage, and the sequence of territory development.

The General Plan of the Settlement is developed in two stages:

### 1. Concept of the General Plan

45 Paragraphs 9-13 of SN KR 30-02:2020 *"Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation"*. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>



The initial stage involves crafting the concept of the general plan. This phase defines the long-term strategy and development stages for the settlement, focusing on economic, social, ecological, and urban planning aspects. The concept serves as the foundation for crafting the project outline for the settlement's development.

## 2. General Plan of the Settlement

Building upon the conceptual groundwork, the second stage involves formulating a detailed General Plan for the settlement. This plan, developed within the settlement's boundaries, determines the territorial organization for 15-25 years. It addresses the placement of citywide social objects, key directions for engineering and transportation system development, measures for preserving natural and historical heritage, and the sequence of territory development. The plan is executed at a scale of 1:5000 or 1:10000 and includes proposals for the development, preservation, and, in exceptional cases, cessation of functions for separate residential, industrial, and other entities. It also outlines agricultural and other production organization, functional zoning, nature conservation zones, transport and pedestrian connectivity, architectural-planning structures, and the placement of service objects, communications, and engineering structures.

**The General Plan of the Territory of Aiyl Aimak** is developed for a period of 15-25 years and for the

purpose of effective functional use of the territory, solving environmental, social, economic, land and aesthetic problems of organizing the living environment of the population, covering all settlements, other residential, industrial, and other purposes interconnected with them. It consists of four components:

### Territory Layout Scheme of Aiyl Aimak

- Scale: 1:10000, 1:25000 or 1:50000
- Depicts project boundaries, agricultural and other enterprise locations, settlements, and influential functional zones.
- Includes the administrative centre and adjacent areas.
- Shows inter-settlement transport and engineering communications.

### Contemporary Land Use Plan

- Scale: 1:15000 or 1:2000
- Displays established settlement boundaries, land use categories, ownership types, development reserves, mineral deposit boundaries, and ecological disaster areas.
- Identifies areas needing landscape restoration and delineates protective and regulatory zones

### General Plan (Base Drawing)

- Scale: 1:5000 or 1:2000
- Illustrates settlement boundaries and proposes:
  - 1) Development, preservation, and, in exceptional cases, cessation of functions for separate residential, industrial, and other entities,
  - 2) Organization of agricultural and other production,
  - 3) Functional zoning for territories and settlements,
  - 4) Preservation and protection zones for water, historical and cultural monuments,
  - 5) Development of transportation and pedestrian connections, architectural planning structures and territorial protection measures,
  - 6) Placement of service facilities, communications, engineering structures, communal facilities, and territorial protection measures,
  - 7) Proposed protective forest belts, afforestation areas, and restoration of disturbed landscapes

### Brief Explanatory Note

**The Detailed Planning Project** serves as a comprehensive technical urban planning document tailored for distinct sections within settlements. It encompasses various crucial aspects, including delineating urban planning regulations that set the boundaries for development and land use. Additionally, it outlines measures for the engineering preparation of

the territory, along with strategies for improvement and environmental protection. Furthermore, it addresses the functional zoning of the territory, strategically organizing spatial distribution. It also considers the optimal placement of cultural, social, and public service facilities to cater to the needs of the local population. In terms of infrastructure, the Detailed Planning Project delves into the organization of transport services, determining efficient routes for main engineering communications. Additionally, it provides detailed cross-profiles of streets, offering a comprehensive perspective on the layout and design considerations within the specified urban area.

**The Development Project** is undertaken within the newly developed or reconstructed areas, encompassing neighbourhoods, quarters, and sections and hosting a mix of residential and public buildings. It contributes to the advancement of the General Plan and the Detailed Planning Project, focusing on urban development nodes and other planning elements in populated areas. To create the Development Project, the customer, together with the developer, draw and approve a design assignment. According to the design assignment, additional types of work not provided for in the urban planning documentation are carried out in the form of master plans, demonstration materials, and mock-ups.

The development of the document occurs in two stages:

**1.** The first stage is an approved segment and serves as the primary technical document for obtaining

permission to design individual developments. It involves the schematic general plan for the development project of a micro-district, block, urban planning nodes, and other planning elements in populated areas. It defines the compositional spatial-planning solution, the functional purpose of objects, reconstruction, regeneration, and beautification, along with a scheme of main engineering networks, organization of transport services, and pedestrian movement. Components of the first stage include a situational plan at scales 1:5000, and 1:10000, illustrating the placement of the planned development within the district's system. It also comprises a reference plan, a traffic and pedestrian organization scheme, and an explanatory note to the development project.

**2.** The second stage follows the approval of the first stage. It includes materials from the first stage, a scheme for landscaping and greening the area, environmental protection and cultural heritage preservation sections, and a comprehensive plan of underground engineering networks. The planning organization submits the completed second stage to the relevant authorities for further review and approval.

Based on the overall analysis and applicability of urban planning documents, the following apply to the territory of the Naryn oblast:

- 1 Regional Planning Scheme for Naryn oblast.
- 5 District Planning Schemes for Ak-Talaa, At-Bashy,

Jumgal, Kochkor and Naryn districts.

- 1 General Plan of Naryn Town
- 27 General Plans of Aiyl Aimaks
- Detailed Planning Projects

## Process of Urban Planning Documentation Development

According to the Kyrgyz legislation, developers of urban planning documentation can be enterprises, organizations and institutions that have the appropriate license for the right to develop urban planning documentation, except for territorial bodies of architecture and urban planning.<sup>46</sup> In practice, the development of urban territorial planning, namely, the General Plan of the Settlement, the General Plan of the territory of Aiyl Aimak, and the Detailed Planning Project is exclusively carried out by the State Design Institute of Urban Planning and Architecture.<sup>47</sup> The Development Project can be developed by legal entities and individuals who have received licenses to undertake such activities.<sup>48</sup> However, it is necessary to note that there is an overlap in the legislation of the Kyrgyz Republic, where the development of general plans is entrusted to both the aiyl okmotu and the mayor,<sup>49</sup> and the State Design Institute of Urban Planning and

Architecture<sup>50</sup> (see summary findings at the end of this section).

At national and regional levels, certain documents have not been developed since 1991, including the general settlement scheme of the Kyrgyz Republic and regional settlement schemes. Additionally, there have been no schemes and projects for district planning in the regions and districts of the Kyrgyz Republic.<sup>51</sup> This is attributed, in part, to a lack of funding.<sup>52</sup>

<sup>50</sup> *Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic.* (n.d.). <http://gpi.kg/ru/ustav/>

<sup>51</sup> Omurkanova, A. (2023). *Principles Of Architectural-Planning and Spatial-Territorial Development of Kyrgyz Cities.* <https://vak.kg/wp-content/uploads/2023/05/disser-2023-1.pdf>

<sup>52</sup> Page (2017), *Inclusive Green Economy in the Kyrgyz Republic. Overview Report.* <https://www.un-page.org/static/5>

<sup>46</sup> SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

<sup>47</sup> *Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic.* (n.d.). <http://gpi.kg/ru/ustav/>

<sup>48</sup> *Temporary Regulations on the composition, procedure for development and approval of the project for the development of neighborhoods in Bishkek.* (2015). <http://cbd.minjust.gov.kg/act/view/ru-ru/97881>

<sup>49</sup> Articles 45 and 51 of the Law of the Kyrgyz Republic "On Local State Administration and Local Self-Government Bodies." (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112302>







## 01

The Customer (local keneshes of aiyl aimaks/cities) sends a letter to the Developer (the State Design Institute of Urban Planning and Architecture) with an order for the development of a general plan.

## 02

The Developer answers whether it is taking on the development of a general plan or whether the development of such a document is currently irrelevant.



## 03

In case the Developer accepts the task, the Customer issues a design assignment to Developer for the development of a general plan of a specific aiyl aimaks or city in the form of an agreement.



## 04

Further, the Customer is obliged to provide the Developer with the necessary initial data for the development. The Customer is responsible for the accuracy of the source data. Also, the Developer can independently collect the necessary information on-site or the collection of initial data can be entrusted to external organizations.



## 05

Next comes the first stage of development of the general plan – the development of the concept of the general plan.



### 5.1

After completion of the development of the concept of the general plan, it is agreed upon with the territorial authorities of architecture and urban planning.



### 5.2

After coordination with the territorial authorities of architecture and urban planning, the next stage involves a public hearing. Local self-government bodies organize this stage by notifying the population at least 2 months before the public hearing date through mass media, simultaneously posting the draft concept of the general plan on the official website of the specified authorities and in a publicly accessible place in their office buildings. On the day of the public hearing, the public should arrive at the defined place where everyone is given the right to speak and ask questions. The Customer organizes the recording and collection of reports, questions, answers and speeches. The results of public hearings are documented in the minutes of public hearings composed of received proposals, comments and the results of their consideration, which are signed by the chairman and secretary.



### 5.3

No later than 5 working days after the day of the public hearing, the protocol based on the results of the public hearing is published on the official website of the executive body of local self-government.



### 5.5

Subsequently, the concept of the general plan undergoes review at a meeting of the urban planning council, the decisions of which are binding.



### 5.4

The Customer analyzes the results of public hearings and makes a decision to finalize the draft concept of the general plan, taking into account public opinion, and sends it to the territorial authorities of architecture and urban planning for consideration when finalizing the draft concept of the general plan.



### 5.6

If approved by the urban planning council, the concept of the general plan is endorsed by the representative body of local self-government – local keneshes of aiyl aimak or city.



## 06

Following the approval of the concept of the general plan, the Developer initiates the second stage – the direct development of the general plan. The Customer and the Developer of the general plan are responsible for ensuring that the decisions made in the concept of the general plan are directly considered in the general plan of the settlement.



### 6.1

After completing the development of the general plan, the Developer and Customer send it for feedback to the relevant territorial authorities – including those responsible for nature conservation, monument preservation, sanitary and epidemiological supervision, the authorized land use control body, transportation, water, forest resources, fire prevention and suppression, and other relevant authorities.



### 6.2

After coordination with all relevant territorial authorities, the next stage involves a public hearing. Local self-government bodies organize this stage by notifying the population at least 2 months before the public hearing date through mass media, simultaneously posting the draft general plan of the settlement on the official website of the specified authorities and in a publicly accessible place in their office buildings. On the day of the public hearing, the public should arrive at the defined place where everyone is given the right to speak and ask questions. The Customer organizes the recording and collection of reports, questions, answers and speeches. The results of public hearings are documented in the minutes of public hearings composed of received proposals, comments and the results of their consideration, which are signed by the chairman and secretary.



### 6.3

No later than 5 working days after the day of the public hearing, the protocol based on the results of the public hearing is published on the official website of the executive body of local self-government.



### 6.5

Subsequently, the draft general plan undergoes review at a meeting of the urban planning council, the decisions of which are binding.



### 6.4

The Customer analyzes the results of public hearings and makes a decision to finalize the draft of the general plan, taking into account public opinion, and sends it to the territorial authorities of architecture and urban planning for consideration when finalizing the draft of the general plan.



### 6.5

If approved by the urban planning council, the general plan is endorsed by the representative body of local self-government (local keneshes of aiyl aimak or city). The approved general plan is considered effective until the approval of a new general plan. Updating the general plan is carried out based on technical and economic justification due to changes in the existing urban planning situation every 5 years, as decided by the local self-government body. A control copy of the general plan is kept in the archives of the Developer.



Figure 12. Schematic representation of the 6-stage process of the General Plan development

**In summary, the following findings can be identified for the regional and local levels:**

**Entrusting urban planning functions to the local tier**

The urban planning documentation development process in Kyrgyzstan involves various stakeholders, including local and central authorities. However, the exact development is centralized to the national level and is monopolized. While the centralized approach ensures uniformity and adherence to standards throughout the country's urban planning initiatives and emphasizes the importance of a cohesive and comprehensive strategy in developing urban areas, taking into account both local considerations and broader national objectives, it is highly recommended to make local authorities responsible for the development of their respective urban planning documentation. This will ensure greater responsiveness to the unique needs and characteristics of each locality, fostering a more tailored and contextually sensitive approach to urban planning. Empowering local authorities with the responsibility to develop their urban planning documentation not only promotes a decentralized decision-making process but also encourages community engagement and participation. By decentralizing this aspect of urban planning, local authorities can play a pivotal role in shaping the growth and development of their communities. This approach is likely to result in more effective and sustainable urban plans that align with both local aspirations and overarching national objectives. Additionally, it facilitates a more dynamic and adaptive response to the evolving dynamics of individual urban areas within the broader national framework.

[bae010ac61b99a0e71f4ab989306e1c/2017-kyrgyz-republic-green-economy-stocktaking-report-rus.pdf](https://www.kyrgyzstan.gov.kg/ru/press/2017-kyrgyz-republic-green-economy-stocktaking-report-rus.pdf)

**Demonopolisation of urban planning function**

Though Kyrgyz legislation provides for the possibility for enterprises, organizations, and institutions that have appropriate licenses for the right to develop urban planning documentation, in practice only the State Design Institute of Urban Planning and Architecture performs it. It is recommended to encourage a broader range of entities to engage in urban planning activities, fostering innovation and improving the overall quality of urban development initiatives.

### Elimination of overlaps in legal instruments

It is crucial to streamline the process, where both local self-government bodies and the State Design Institute of Urban Planning and Architecture possess powers in the urban planning process. It necessitates a clear delineation of responsibilities and collaborative mechanisms to harmonize the efforts of both entities. This will require amending, among others, the Law "On Local State Administration and Local Self-Government Bodies of 2021" (Articles 45 and 51 where it is mentioned that the competence of the mayor's office and *aiyl okmotu* includes the development of the general plan), the Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic which also mentions that the Institute is in charge of general plans development and the building code SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation" (paragraphs 4.5, 4.7) which mentions that the local self-governments are the customers for the urban planning documentation.

It would be crucial to define **a step-by-step process for urban planning documentation development**, accompanied by a well-defined timeline for each stage and the authorities involved (in a form of any document which could be distributed among those in charge). The information that is currently contained in the 1994 Law "On Urban Planning and Architecture of the Kyrgyz Republic" (Article 36), SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation" (paragraph 4; Annex 1) and the 2018 Regulations on Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic is diversified and requires an application of a structured approach which would ensure transparency, accountability, and a clear understanding of the workflow, facilitating smoother coordination between national and local authorities as well as the public.

**Development of the required urban planning documents at the national and regional levels** is also crucial to facilitate the holistic approach in the whole urban development. This involves creating a cohesive framework that aligns with broader strategic objectives while accommodating the unique needs and characteristics of specific regions.



## 4. Financial Context

A city that generates positive financial outcomes and effectively channels its resources towards the right avenues of development enhances its ability to embed resilience into urban growth. Assessing Naryn's financial context reveals how well the city generates revenue, its capacity to allocate funds to priority interventions, and its potential to support resilient and sustainable development. This assessment provides evidence to guide decisions on optimising resources, targeting impact, and prioritising actions, all while maintaining a long-term focus on sustainability.

This chapter begins with an overview of local revenue in the Kyrgyz Republic, followed by an analysis of Naryn's revenue and expenditures. It then examines the Kyrgyz Republic's project financing context, funding allocation mechanisms, and concludes with the capital investment projects underway or planned.



Naryn, Kyrgyzstan Photo © UN-Habitat

## Overview of Local Revenue in the Kyrgyz Republic

Since the adoption of the 2010 Constitution and the 2011 Local Self-Government Act, cities are the only subnational level of autonomous government that collect their own revenues.<sup>53</sup> Naryn, as one of 29 designated cities, is authorized to collect local revenues, create and approve local budgets, and attract investment and grants per Article 18 of the Law on Local Self Government 101 of 2011 (as amended August 8, 2019). Local governments are also the primary provider of services to the local population.<sup>54</sup> Funding for services and local capital investments comes from three main types of revenue

---

53 World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth.

54 Services and responsibilities of local government stipulated in the Law on Local Self Government are: management of municipal property, management of sewage systems, water treatment facilities and drinking water supply, maintenance of municipal roads, organization of street lighting, maintenance of cemeteries, landscaping and gardening in public areas, maintenance of parks, maintenance of sport and recreation facilities, waste management, management of public transportation, protection of local cultural and historical sites, organization and maintenance of local libraries, establishment of rules on land use and enforcement of the regulations on urban planning and architecture, advertising issues; facilitation of public order, development folk art; creation of conditions for leisure, organization of activities for children and young people, development of physical culture and sports, facilitate prevention and mitigation of emergency situations. Esenaliev, D., & Kisunko, G. (2015). Local budget transparency and participation: evidence from the Kyrgyz Republic. World Bank Policy Research Working Paper, (7154).

streams: taxes shared by the national government, local taxes, and transfers from the national budget.<sup>55</sup>

**1. Shared taxes:** Shared taxes are collected by the national government (local government may also be involved in the administration) and transferred back to the local government based on a fixed percentage and the origin of collection. Shared taxes contribute a significant portion of local government revenues, and include the following revenue streams:

- Personal and Corporate Income Tax: Income and profit tax (from individuals and businesses) provides the largest share of local revenue across municipalities, including in Naryn.
- Rate: *The tax rate is a flat 10 per cent on gross individual income and corporate profit, lower than other countries in the region and globally.*<sup>56</sup>
- Shared percentage: *The tax code stipulates a step-up schedule for the portion of taxes that are transferred back to local governments. As of 2021, 100 of income and profit tax was due to be transferred back to local governments based on origin of worker (not where individuals live).*

---

55 United Nations Development Programme (UNDP). (2023). Kyrgyz Republic Development Finance Assessment (DFA).

56 World Bank. (2020).

• *Exemptions from profit tax: Agricultural production and processing companies*<sup>57</sup>

• *Patent-based<sup>58</sup> taxes and the Single Tax: These taxes aim to simplify compliance for small businesses and promote formalization. Businesses that do not reach the VAT threshold (8 million som, approximately \$90,000 USD) can opt into this simplified taxation scheme wherein they are only obligated to pay a fixed percentage of turnover and are exempt from social contributions.<sup>59</sup> These businesses are accordingly not liable for income tax (profit tax) or sales tax.<sup>60</sup> Depending on the type of business, either a patent-based tax or a single tax is collected. Patent-based taxes and the Single Tax are collected by the National Government and transferred to the Local Government of origin.*<sup>61</sup>

---

57 Ibid.

58 Patents are documents issued by the National Tax Authority that authorize businesses and confirm receipt of tax payments

59 PEFA Secretariat. (2021). Kyrgyz Republic Public Expenditure and Financial Accountability (PEFA) Performance Assessment Report.

60 Government of the Kyrgyz Republic. (2009). Tax Code of the Kyrgyz Republic 2009.

61 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme. Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf); КЫРГЫЗ РЕСПУБЛИКАСЫНЫН МАМЛЕКЕТТИК ЖАНА МУНИЦИПАЛДЫК БАШКАРУУСУНУН. (n.d.). Centralasia. Retrieved December 3, 2023, from [https://centralasia.hss.de/fileadmin/user\\_](https://centralasia.hss.de/fileadmin/user_)

**2. Local Taxes:** All properties, including buildings and vehicles, are directly taxed by the Local Government, as stipulated in the Tax Code of 2009 and the Organic Budget Law.

- Real estate tax: Applied to both residential and non-residential buildings according to the following formula:
- *Rate: 0.35 per cent for residential buildings and 1 per cent for commercial and industrial buildings, charged on the taxable value.*
- *Taxable value = [Value per square meter according to the Tax Code methodology] \* [Area of building in square meters] \* [Inflation Factor] \* [City Factor]<sup>62</sup> \* [Neighbourhood Factor]<sup>63</sup> \* [Commercial and Industrial Factor]<sup>64</sup>*
- *Abatement: 5,000 Soms are deducted from the tax liability of owner-occupied residential buildings.*
- Land tax: Applied on urban and agricultural land and calculated using the Tax Code which stipulates the base rate per meter squared for each type of land (urban, agricultural), Rayon (district) location, and use. In urban areas, these base rates are multiplied by a coefficient based on zone (Coefficient is set by the Local Council

[upload/Projects\\_HSS/Centralasia/Dokumente/2018/KYRGYZ-KITEP.pdf](#)

62 Properties within cities other than of Bishkek are all reduced by stipulated amounts. Osh property values are reduced by 10% and other cities are reduced by between 20-90%.

63 Within each city, a factor between 0.3-1.5 is applied based on zone of building. Cities can propose their own zone designations, but the national government must approve them.

64 Value adjustment based on commercial or industrial sector, between 0.3-1.6.

and required to average to 1).<sup>65</sup>

**3. Transfers:** There are two types of national transfers stipulated in the Organic Budget Law of 2016:<sup>66</sup>

- Equalization Transfers are designed to bridge the gap between local revenue and budget needs.<sup>67</sup> The formula for these transfers is based on the 'revenue capacity' of each local jurisdiction vs. the expenditure needs (calculated based on a variety of factors including population and location). The ensuing gap between these two figures equals the transfer amount.<sup>68</sup> These transfers are generally more important in smaller and poorer jurisdictions.
- Targeted Transfers are used to cover shortfalls that occur due to changes in legislation throughout the year or delegated functions from the National Government. For example, in the past, targeted transfers have been used to cover mandated increases in public wages.<sup>69</sup>

## Budgetary Process

### • Timing:

- *New budget approvals: The National budget proposal is submitted to the parliament each October. This includes the estimated amount that each local government will receive in shared tax revenues and transfers. Budget*

65 World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth. World Bank.

66 Ibid.

67 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme. Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf)

68 World Bank. (2020).

69 Ibid.

*negotiations finalize by the end of November.*<sup>70</sup>

- *Submission of completed budgets: Local governments submit their revenue and expenditure reports for the previous year by March 1st each year.*

• **Program-based Budgeting:** As of the 2017 revision to the Budget Code, all spending organizations, including ministries and local governments, are required to create and execute budgets in a program-based budgeting format.<sup>71</sup> Despite this law, program-based budgeting is not common practice for local governments.

• **Public participation and transparency:** Kyrgyz law mandates the public discussion and adoption of local budgets as well as the publication of budget decisions through local mass media.<sup>72</sup> Yet, there is no enforcement mechanism for this requirement and there is no guarantee that government will incorporate public feedback. A low-level of knowledge about public rights and the budgetary process, in general, prevents more engagement.

- *Per an interview with Naryn government officials, Naryn conducts public budget hearings and adopts the budget at a public City Council hearing.*

70 PEFA Secretariat. (2021). Kyrgyz Republic Public Expenditure and Financial Accountability (PEFA) Performance Assessment Report. Retrieved December 3, 2023, from <https://www.pefa.org/node/181>

71 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme. Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf)

72 Kasymova, Jyldyz T., and Hindy Lauer Schachter. "Bringing Participatory Tools to a Different Level: A Case Study of Local Participatory Practices in Kyrgyzstan." Public Performance & Management Review 37, no. 3 (March 1, 2014): 441–64. <https://doi.org/10.2753/PMR1530-9576370305>

## Naryn Town Revenue and Expenditures

Naryn has increased revenues over the last two years. Between 2021 and 2022, gross income increased by 40 per cent, primarily due to a 51 per cent increase in income tax. Based on the first 9-months of revenue data in 2023, Naryn is on track to increase revenue by another 9 per cent in 2023.

### Naryn's Main Revenue Streams in 2022

- **Shared Taxes:** Shared taxes (income, patent, and unified small business tax) composed approximately 74 per cent of gross annual income in 2022
- *Income tax is by far Naryn's largest single revenue stream, comprising nearly 67 per cent of gross income in 2022. Income tax has increased substantially between 2021 and 2022 and is projected to increase by 20 per cent between 2022 and 2023.*
- *The two small business taxes, patent-based tax and unified tax for small businesses, comprised a total of 7 per cent of gross income in 2022.*
- **Transfers:** In 2022, transfers were the second largest income stream and provided 8 per cent of gross income. According to data from the first 9 months of 2023, transfer income is projected to decrease by 49 per cent this year.
- *In Naryn Region in 2022, 505.1 million Soms were provided from the Republican budget in interbudgetary transfers<sup>73</sup> and split between the five districts.*
- *Of these, 227.2 million (45 per cent) were provided in the form of equalizing transfers; and*
- *277.8 (55 per cent) were provided in the form of targeted transfers, which were designated for specific purposes including:*
  - *58.2 per cent towards increases in salaries of municipal and cultural workers*
  - *15 per cent towards compensation for 50 per cent of electricity*
  - *6 per cent towards land tax losses*
  - *5 per cent towards the financial deficit of local self-government bodies*
- **Non-tax revenue:** Revenue from services provided the third greatest share of revenue in 2023. This was primarily composed of 'Fees for the provision of additional services by preschool and school institutions' and 'payments for unclassified other types of services.'
- **Local taxes:** Property taxes (combined revenues from the building tax, land tax, and vehicle tax) provided 6 per cent of total income in 2022. Income has increased between 2021-2023, with a 28 per cent increase projected for 2023. Revenues over the last three years have been fairly evenly distributed between the three components of property tax, with vehicle tax providing the largest portion each year (between 42-56 per cent of property tax revenue).

- **Compliance rate:** According to data from the Naryn Government, a low portion of properties, especially residential properties, pay property taxes. More information is needed to determine whether it is compliance rates or registration rates that lead to this low payment percentage. There may also be official exemptions that contribute to the low rate of payment.

Table 1: Rate of Payment of Property Tax in Naryn Town

Type of Property	Number of taxpayers <sup>74</sup>	Estimated Total Number of Properties <sup>75</sup>	Payment Rate
Residential	170	15,942	1%
Non-residential (Commercial and Industrial)	407	625	65%
Vehicles	3,869	[Need data on car ownership]	
Total:	4,446		

In 2022, actual revenues exceeded projected revenues by 5,213 thousand som, approximately 2 per cent of total budgeted revenue. This was due to the municipality's largest revenue source, income tax, exceeding projections by approximately 3 per cent. According to the 2022 Budget Explanation Document, this increase was due to the mandatory increase in state and municipal employee salaries enacted in 2022. Other significant deviations from the projected revenue were, a 10 per cent increase in property tax revenue, and a 6 per cent decrease in national transfers.

### Expenditures

<sup>74</sup> Per Naryn Mayor's Office as of December 9, 2023.

<sup>75</sup> According to UN-Habitat estimates

<sup>73</sup> 2022-ЖЫЛЫ НАРЫН ОБЛУСУНА 505,1 МЛН СОМ БӨЛҮНГӨН 2023-ЖЫЛГА 478,9 МЛН СОМ КАРАЛАТ. (n.d.). Кыргыз Республикасынын Финансы министрлиги. Retrieved December

6, 2023, from <https://www.minfin.kg/posts/show/v-2022-godu-narynskoy-oblasti-bylo-vydeleno-5051>



Revenues have exceeded expenditures for the last two years and are projected to exceed expenditures in 2023 as well. This has created a surplus in each year. The cumulative surplus as-of the end of 2021 was 25.5 million Som and, as-of the end of 2022 was 45.8 million Som.<sup>76</sup> Surplus funds can be added to the following years' budget, if approved by the Town Council.<sup>77</sup>

The largest portion of the municipal expenditures go toward Housing and Communal Services, which ranges from a low of 36 per cent of the 2022 budget to a high of 44 per cent in 2021. The second largest allocation is to Education, which received between 21 per cent and 25 per cent of expenditures. The third largest expenditure bucket in each year 2021-2023 was General-Purpose Public Service, which accounted for between 16-24 per cent of spending. These three buckets of spending account for over 85 per cent of spending in 2021 and 2022, and 77 per cent of budgeted expenditures in 2023. The remaining funds were spent on Leisure, Culture and Religion and Social Protection in 2021 and 2022. In 2023, the remaining funds were budgeted for Economic issues.

## Functional Budget Allocations

Salaries account for the largest portion of Naryn's annual budget (48 per cent of the 2023 budget). This is the case across local governments in the Kyrgyz Republic, as it has one of the largest spending on public employees in the region. On average, the Kyrgyz Republic spent about 8.8 per cent of GDP on wages and salaries between 2018-2021 compared to 5 per cent of GDP in the Caucasus

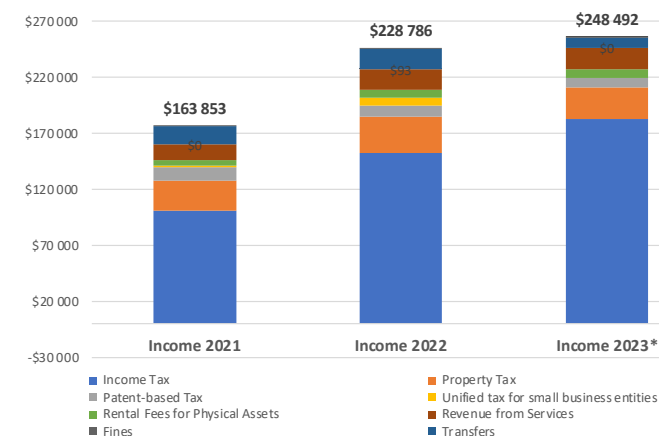
and 4 per cent of GDP in Kazakhstan.<sup>78</sup> Wages were increased nationally in 2021 (and the National government provided accompanying funding to local governments to cover this increased cost).

Actual expenditures have exceeded the initial approved budget in each year 2021-2023. In 2022, expenditures exceeded the initial approved budget by 53,070 thousand Soms (34 per cent of the initial approved budget). The largest increases in expenses between the initial approved budget and actual were 1) Salary of state employees, 2) Buildings and Structures, and 3) Machinery and equipment. The largest decrease in funds was in 'Acquisition of other goods and services.'

According to the 2022 Expenditure Implementation Explanation, state and municipal employee wages were increased in 2022 and the national government allocated 5.4 million Som additional to the Naryn budget to account for this increase. The Naryn Town Council approved the transfer of 12.9 million Som from the 'Economic expenses not included in other categories' for a total expenditure of 17.1 million Som on investment in town infrastructure through City Hall.

## Accounts Payable/Receivable

In 2022, unpaid taxes totalled 69.6 thousand Soms. Accounts receivable totalled 6.5 million Som by the end of the year, a 21 per cent decrease from the balance at the beginning of the year. Of these accounts receivable, 75 per cent were 'Other internal accounts receivable' and 21 per cent were 'Fixed assets paid in advance.' Accounts payable



*\*Income 2023 is projected based on the first 9-months of data according to the growth over the first 9-months of 2022 data.*

Figure 13. Gross income, 2021-2023

totalled 18.95 million Soms, a 150 per cent increase from the beginning of the year. Of these, 18.8 million accounts payable, 99 per cent million are owed for 'Accounts payable for services and work.'

<sup>76</sup> City of Naryn, Form3: Summary Revenues Expenditures Final Budget Report for 2022

<sup>77</sup> Per interview with Naryn Finance Department on December 4th, 2023.

<sup>78</sup> World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth. World Bank. World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth. World Bank.

## Kyrgyz Republic Project Financing Context

• **Borrowing:** According to the Law on the Financial and Economic Foundations of Local Self-Government (Art. 8-11), local governments are allowed to borrow on condition that debt service obligations do not surpass 20 per cent of annual income, less transfers from the national government.<sup>79</sup> Local governments are not allowed to issue guarantees.

### Kyrgyz Republic Project Financing Context

• **Borrowing:** According to the Law on the Financial and Economic Foundations of Local Self-Government (Art. 8-11), local governments are allowed to borrow on condition that debt service obligations do not surpass 20 per cent of annual income, less transfers from the national government.<sup>80</sup> Local governments are not allowed to issue guarantees.

• **Public-Private Partnerships (PPPs):** PPPs are currently regulated by the National 2021 PPP Law and 2021/2022 bylaws, including a strategic plan for PPP development 2022-2026.<sup>81</sup> A project development support facility was established in 2014 to assist with the identification and development of PPP projects. As of 2021, 55 PPP projects have been identified nationally

79 World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth. World Bank.

80 World Bank. (2020). Kyrgyz Republic Public Expenditure Review: Creating Fiscal Space for Inclusive Growth. World Bank.

81 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme. Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf)

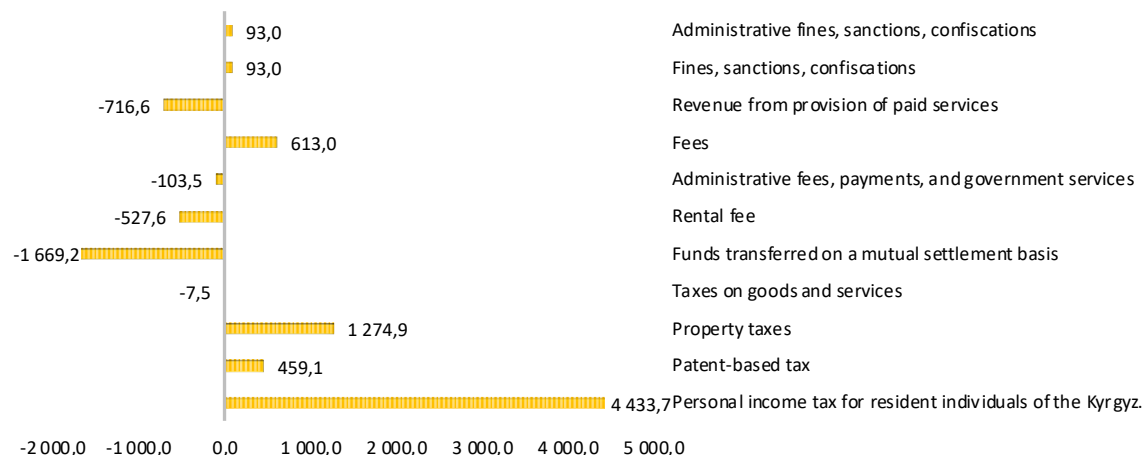


Figure 14. Projected vs actual revenues, 2022

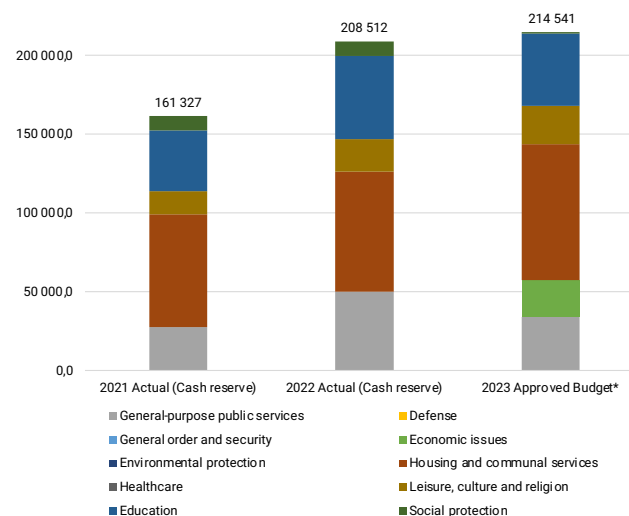


Figure 15. Expenses (Budgetary and Special Funds), 2021-2023

and are in various stages. Nationally, three projects are in the process of being implemented: Establishment of hemodialysis centers (10 million Euro), Children's Cinema Reconstruction (\$300,000 USD), and electronic ticketing in public transport (USD 2 million). Past large national PPPs include, construction of the customs and logistics complex (USD 30 million) and construction of the tunnel at Too-Ashuu Pass (USD 234 million).<sup>82</sup>

- **Bonds:** Oblasts are legally allowed to issue bonds, yet none have accomplished this to date.<sup>83</sup>

- Per Naryn officials, there are no plans to develop a municipal bond issuance.

- **Official Development Assistance (ODA):** As of 2020, the largest ODA investors in the Kyrgyz Republic were the Asian Development Bank (ADB), EU institutions, and the United States.<sup>84</sup>

- The largest sectors to receive ODA funds are: social infrastructure, health and population, economic infrastructure, and education.

- **Incentive Grants from the National Government:** Additionally, the national government provides project financing on a competitive basis to local governments. These grants are provided for the capital costs of infrastructure projects in local governments' socio-economic development plans. These projects must be completed within the year. Local governments are allowed to submit a maximum of three projects annually

for financing consideration.

- The maximum grant amount is 5 million Som. Local governments must contribute a specified amount ranging from 7 per cent-30 per cent to each project's financing based on profitability of the project. If a project costs more than 3 million Som, the local government must contribute 50 per cent of projects costs from its own budget.

- In 2023, the National Government approved 332 projects for implementation. As of the first 9 months of 2023, 224 projects totalling 243.8 million Soms of investment have been financed.<sup>85</sup>

- Of the projects implemented in the first 9 months of 2023, 36 per cent were allocated to engineering and communication infrastructure facilities, 34 per cent of the funding was directed towards schools, 11 per cent towards kindergartens, 7 per cent towards objects of cultural significance, and 1 per cent towards healthcare facilities.

- Within the first 9 months of 2023, Naryn oblast received 13.6 million Soms (5.6 per cent of total grants) for 18 projects (8 per cent of total projects).

- Naryn City received 5,478,750 Som for two projects (40 per cent of Naryn Region's allocation and 2 per cent of total national funding).

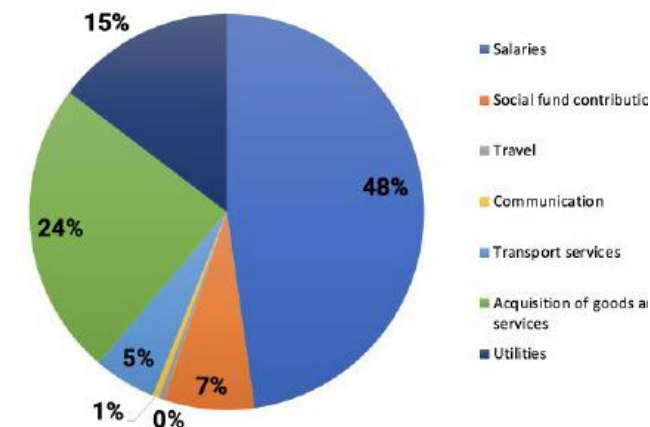


Figure 16. 2023 Operating Budget, Functional Allocations

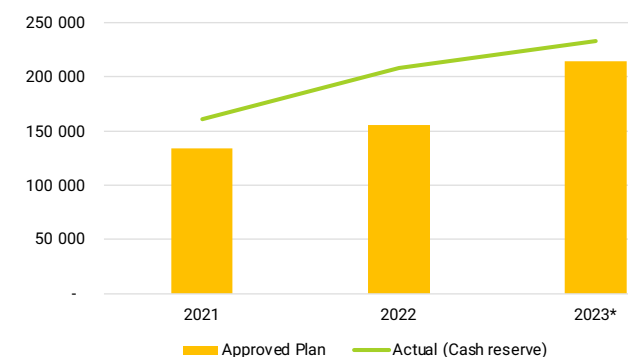


Figure 17. Expenditures: Budgeted vs Actual, 2021-2023

## Naryn Capital Investment Projects

85 ДЕМ БЕРҮҮЧҮ ГРАНТТАР АРКЫЛУУ 243,8 МЛН СОМ КАРЖЫЛАНДЫ. (2023). Кыргыз Республикасынын Финансы министрлиги. Retrieved November 30, 2023, from <https://www.minfin.kg/posts/show/po-stimgrantam-profinansirovano-2348-mln-somov>

82 Ibid.

83 Ibid.

84 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme. Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf)

The "Development Strategy of Naryn City for 2022-2026", approved by the Naryn City Council in June 2022, outlines 55 development projects with a total cost of approximately 1.23 billion Soms (\$13.8 million USD). By the end of 2022, 17 projects (31%) were either in progress or completed, with external investments amounting to 21.29 million Soms (1.73% of total project costs).

In recent years, most funding has been sourced from Official Development Assistance (ODA), including a major project financed by the European Bank for Reconstruction and Development (EBRD). The National Government has also provided substantial funding for local projects, as Naryn itself has not directly borrowed from financial institutions. Instead, the National Government secures loans and sub-allocates these funds alongside grants for local development. While the local budget has contributed to project financing, it has not independently funded major capital projects in recent years.

In 2022, the National Government supported 11 projects

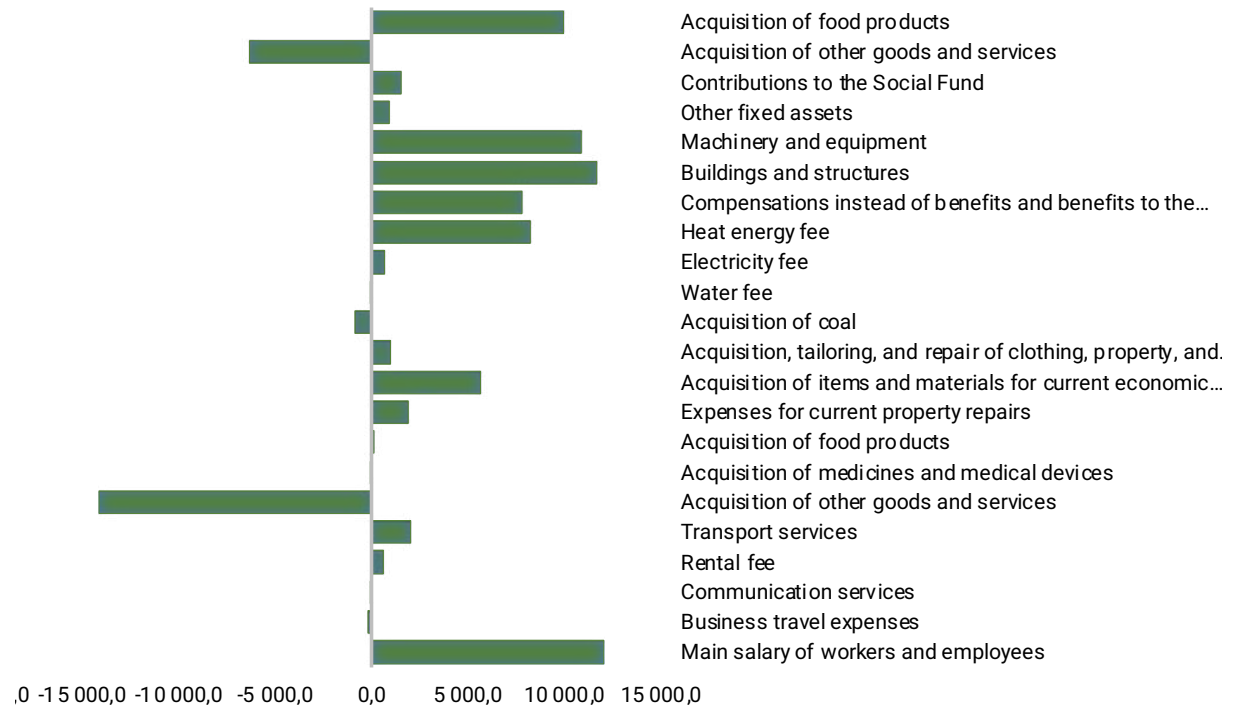


Figure 18. Differences between budget and actual expenses, 2022



in Naryn, totalling 164.8 million Soms.

**Construction of a new two-story 375-seat building at Secondary School No. 9, names 'A. Sadykov'**

- Funder: National government
- City investment: 1 ha of land
- Cost: 141,500,000 Soms

**"Partial Incentive Grants" from the National Government helped to fund:**

- Six projects in 2022 totalling 15,343,626 Som (Funded 73.5 per cent by the national government and 26.5 per cent by the local government)<sup>86</sup>
- Two projects in 2023 totalling 7,897,008 Som (Funded 70 per cent by the national government and 30 per cent by the local government). These two projects involve the overhaul of the heating system of secondary school No. 5 named after K. Jakypova and the reconstruction of "Mazar-Bulak" square.

**Construction of a 100-seat kindergarten, "Ata-Turk" Kindergarten No.1**

- Funder: Etimesgut Municipality, Ankara, Turkey
- City investment: 1,696 square meters of land
- Estimated cost: 52.6 million Som<sup>87</sup>

**A program entitled "Increasing the stability of the city of Naryn" will provide 8 million Som in 2023 to implement 4 projects on preventing emergency situations.**

External Donor Grant Funding: Two projects totalling 57.5 million Som of donor funding were implemented in 2022.

**Construction of a new 50-seat building for Kindergarten No.16, "Imad"**

- Funder: MSDSP KG public fund invested 4,901,000 Som; Donor: Australian foreign aid program managed by the Ministry of Foreign Affairs and Trade
- City Investment: 1,202,420 Som
- Total cost: 6,103,420 Som

<sup>86</sup> In 2021, six projects totalling 13,726,150 soms (Funded 70 per cent by the national government and 30 per cent by the local government); In 2023, two projects totalling

<sup>87</sup> Cost according to the year end 2022 report; cost is listed as 35 million Som in the 2022-2026 Naryn City Development Plan.

**Blended Finance:** A two-phase ‘Rehabilitation of water supply and sewage systems of Naryn town’ is currently being implemented. The project has a total cost of 12.7 million euros (1,212 million Som), including 4 million euro in loans and 8.7 million euro in grant funding.

### Phase 1: Water supply

- Cost: 6.2 million Euros (2 million Euro loan, 4.2 million Euro grant)
- Funder: European Bank
- Loan rate: 1.5 per cent on drawn amount and 0.5 per cent on the unused amount
- Loan provided to the national government and then through a sub credit agreement to Naryn Town
- Project began July 2018
- Debt service grace period ends in 2024. Naryn will be responsible for paying approximately 33 million Som in debt service to the National Government (Approximately 14 per cent of total 2022 spending)<sup>88</sup>

### Phase 2: Sewage treatment facilities

- Estimated cost: 6.5 million Euros (2 million Euro loan, 4.5 million Euro grant)
- Funder: EBRD, the Swiss Confederation and the European Union

**Private Investment:** Two private projects totalling 132 million Som of private investment were implemented in 2022.

### Construction of a three-story Shopping centre ‘Choluk - Father’

- Funder: Tentiev
- Cost: 90 million Som

### Private medical “Grant clinic”

- Funder: Y. Junusova
- Cost: 42 million Som

## In summary, the following challenges and opportunities can be identified:

### Limited Local Control:

Local governments in Kyrgyzstan, including Naryn, have minimal control over their revenues. Tax rates and assessment policies are set at the national level, leaving little room for local adjustments. Over 80% of Naryn's revenue comes from nationally shared taxes and transfers, limiting the city's ability to tailor taxation to local needs. To increase revenues without national intervention, Naryn must focus on improving compliance and reducing registration gaps.

### Tax collection and Compliance:

Understanding and addressing the tax registration and compliance gaps is critical. This includes gathering data on taxpayers and the enforcement process. Expanding digital payment and tracking systems could enhance compliance and improve revenue collection.

### Barriers to Private Investment :

According to a 2019 World Bank survey, the largest challenges to private sector investment nationally are: (i) practices in the informal sector (ii) political instability (iii) corruption (iv) inadequately educated workforce (v) low access to finance compounded by lack of trust in financial markets, and (vi) tax rates.<sup>89</sup>

These barriers also hinder local efforts to attract investment

89 UNDP. (2023, June). Kyrgyz Republic Development Finance Assessment (DFA). United Nations Development Programme.

and diversify revenue sources.

### Improving Transparency and Public Engagement:

The Kyrgyz Republic scores poorly on transparency and corruption indicators, which can reduce tax compliance if taxpayers cannot trace the benefits of their contributions. Greater public participation in budgeting and increased awareness of how tax revenues are spent can boost compliance and revenue.

### Budget Gaps and Debt Service:

The significant gap between budgeted and actual revenues and expenditures creates challenges for financing and debt servicing. Predictable revenues are essential for attracting investment and meeting debt obligations. Better systems for revenue forecasting and expenditure tracking are needed to address these gaps.

Local officials have indicated that the National Government initially committed to covering debt service on the EBRD loan but has since shifted this responsibility to the municipal budget. The national framework for prioritising loans to local governments also lacks transparency. Clarity on the division of fiscal responsibilities between national and local governments, as well as requirements for securing national funding, is vital for Naryn to plan and execute capital investments effectively.

Retrieved November 29, 2023, from [https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz\\_republic\\_dfa\\_fin\\_july\\_2023-1.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-07/kyrgyz_republic_dfa_fin_july_2023-1.pdf)







## 5. Economic Context

The economic context of Naryn provides essential insights into the city's opportunities to enhance its competitiveness and potential, while identifying barriers to achieving economic resilience. Building economic resilience is a crucial component of a comprehensive approach to creating a resilient city, particularly given the constraints on livelihoods imposed by Naryn's unique location and context.

Understanding the national, regional, and local economic drivers forms the foundation for informed planning decisions and helps prioritise interventions that support sustainable urban development. Moreover, Naryn's economic resilience contributes directly to broader regional growth, underlining its importance within a larger framework.

Assessing Naryn's economic context also reveals industries with potential for growth, which can be leveraged through spatial and non-spatial initiatives. This holistic perspective is key to achieving sustainable and resilient outcomes.

This chapter begins with an overview of the national economic context before focusing on regional and local dynamics to identify barriers and drivers for Naryn's economic development.



Naryn, Kyrgyzstan Photo © UN-Habitat

## National Outline

The Kyrgyzstan economy was one of the hardest hit in the region by the COVID-19 pandemic. The nation's dependency on services, remittances, and natural resources made it particularly vulnerable.<sup>90</sup> The pandemic led to an 8.6 per cent decrease in economic output, significant job losses, and a notable increase in poverty rates.<sup>91</sup>

In the aftermath of the COVID-19 pandemic, Kyrgyzstan's economy has shown signs of recovery. Recent data indicates a 7 per cent growth in 2022 on its GDP, surpassing initial forecasts.<sup>92</sup> This growth was primarily fuelled by a rebound in various economic sectors, despite external geopolitical challenges related to the Russian-Ukraine conflict. The services sector has seen a significant boost, particularly in areas like logistics, hospitality, and financial services. This growth is fuelled by a spike in trade activities and growing demand, further influenced by Kyrgyzstan's exports to Russia growing by 2.5 times and the influx of Russian nationals into Kyrgyzstan<sup>93</sup>, driven by

---

90 One Year Later in the Kyrgyz Republic's Battle Against COVID-19, The World Bank, <https://www.worldbank.org/en/news/feature/2021/03/17/one-year-later-in-the-kyrgyz-republic-s-battle-against-covid-19>

91 How the Kyrgyz Republic Tackled the Pandemic, International Monetary Fund (IMF), <https://www.imf.org/en/News/Articles/2021/07/29/na072921-how-the-kyrgyz-republic-tackled-the-pandemic>

92 Economic Report 2023 Kyrgyz Republic, Swiss State Secretariat for Economic Affairs (SECO)

93 ibid

geopolitical factors.

Kyrgyzstan's post-pandemic economic recovery is further evidenced by a 17 per cent increase in GDP per capita<sup>94</sup> from 2018 to 2022. However, despite this progress, Kyrgyzstan still ranks as the country with the second-lowest GDP per capita among all Central Asian nations and 166th in the world at \$1,606.7. The economy is grappling with high inflation at 13.9 per cent, mainly due to rising food and fuel prices.

As of 2022, the unemployment rate in Kyrgyzstan stands at a relatively low 4.9 per cent<sup>95</sup>, below the Central Asian average of 5.7 per cent.<sup>96</sup> However, this figure doesn't fully capture the economic reality, as the country's extensive informal economy limits the effectiveness of fiscal policies. In total, 71.8 % of the economic activity in Kyrgyzstan is in the informal sector. Additionally, according to the Asian Development Bank, 33.3 per cent of Kyrgyzstan's population lived below the national poverty line in 2021.<sup>97</sup>

---

### The National Development Strategy (2018-2040),

94 In current USD

95 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/opendata/category/113/](http://www.stat.kg/en/opendata/category/113/)

96 World Bank (2023). Unemployment, total ( per cent of total labor force) (modeled ILO estimate)

97 Asian Development Bank. Basic Statistics, 2023

established by the government, identifies four key sectors for prioritization: Agriculture/agro-processing, mining, light industry (specifically the garment industry), and tourism. The Government's strategy for fostering sustainable and inclusive economic growth hinges on nurturing these sectors, primarily through the development of small and medium-sized enterprises oriented towards exports. The 'Digital Kyrgyzstan 2019-2023' initiative represents Kyrgyzstan's strategic approach to advance its digital industry. This comprehensive program, underscored by the establishment of a dedicated Ministry of Digitalization, focuses on enhancing digital infrastructure and connectivity, boosting digital literacy and IT education, advancing e-government services, and driving economic growth through the digital transformation of the financial and banking sectors.

## Overview of Kyrgyzstan's Economic sectors:

The main take-aways from the composition of the GDP structure and the current socio-economic context are:

**Diverse Economic Base:** According to the National Statistical Committee of the Kyrgyz Republic, it appears that the country has a relatively diversified economic structure. Key sectors include trade (17 per cent)<sup>98</sup>, manufacturing (13 per cent), and agriculture, forestry, and fishing (12 per cent)<sup>99</sup>. However, the actual strength of this diversification depends on the depth and productivity of each sector and how interconnected these sectors are to the broader global economic system.

**Agriculture's Limitations:** Agriculture makes up a significant 17.8 per cent of Kyrgyzstan's GDP, slightly surpassing the average for low-middle income countries globally.<sup>100</sup> However, the sector faces significant food challenges. Notably, food security remains a concern, highlighted by the country's reliance on essential staple imports such as wheat, which covers about 50 per cent of the country's domestic consumption needs.<sup>101</sup> This issue is exacerbated by factors such as disorganization and undercapitalization in the agricultural sector, deteriorating

irrigation infrastructure, and climate-related challenges, such as droughts. Additionally, many local producers of dairy, meat, fruits and vegetables struggle to meet the stringent veterinary and phytosanitary standards set by the Eurasian Economic Union (EAEU), limiting their export potential within the Union.<sup>102</sup>

**Growth in Manufacturing Value:** Despite a consistent decline in the manufacturing sector's share of GDP composition since 2019, the Kyrgyz Republic's total manufacturing output has seen substantial growth. From 2018 to 2022, the sector expanded by 65.5 per cent, with production volume soaring from 257,348.5 million Soms (approx. 2.83 billion USD<sup>103</sup>) to 425,945.9 million Soms (approx. \$3.46 billion USD<sup>104</sup>). This growth was driven predominantly by the mining processing sector, which has emerged as the primary catalyst for the sector's expansion, as we can see in the figure below. Moreover, food processing and the manufacturing of rubber, plastics, and other non-metallic mineral products have.

**Dependence on Service sectors:** Kyrgyzstan's service sector contributed approximately 52 per cent of the country's GDP in 2022.<sup>105</sup>

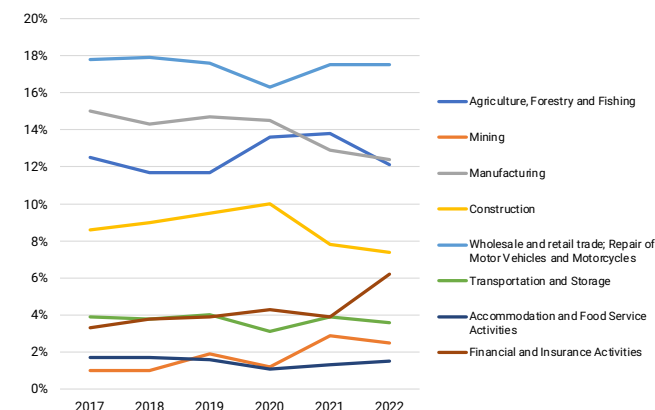


Figure 19. GDP structure of Kyrgyzstan by selected economic sectors

**a) Wholesome and Retail Trade:**<sup>106</sup> Trade<sup>107</sup> is the main component of Kyrgyzstan's GDP, playing a pivotal role in the Kyrgyz Republic's economy, accounting for 17 per cent of the GDP.<sup>108</sup> Total trade turnover rose by 79 per cent, indicating robust growth within the trade sector. Wholesale and retail trade were the primary drivers of this national trade turnover, with increases of 117 per cent and 54 per cent<sup>109</sup> respectively from 2018 to 2022.

The country is experiencing a substantial trade deficit,

98 'Trade' in this context refers to the 'Wholesale and Retail Trade; g' sector as classified in the economic data.

99 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/opendata/category/2314/](http://www.stat.kg/en/opendata/category/2314/)

100 Source: The Global Economy, GDP share of agriculture in Lower middle income countries (World Bank classification) Retrieved from [https://www.theglobaleconomy.com/rankings/share\\_of\\_agriculture/WB-low-mid/](https://www.theglobaleconomy.com/rankings/share_of_agriculture/WB-low-mid/)

101 Source: FAO. "Kyrgyzstan: Food Security Situation at a Glance." Food and Agriculture. <https://www.fao.org/giews/countrybrief/country.jsp?code=KGZ>

102 Kyrgyz Republic - Agriculture (trade.gov)

103 The figure for 2018 is converted using the average exchange rate of that year

104 The figure for 2022 is converted using the average exchange rate of that year

105 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

106 'Wholesome and retail trade' in this context refers to the 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' sector as classified in the economic data.

107 ibid

108 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

109 ibid

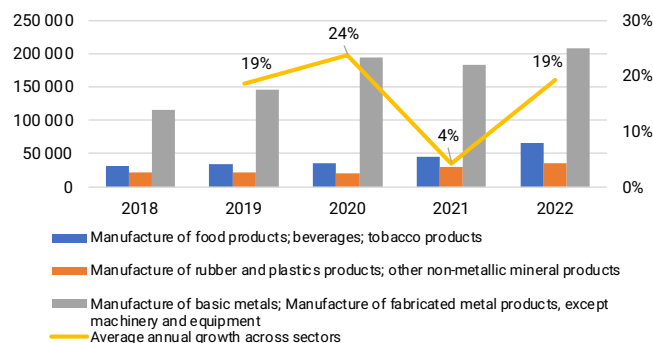


Figure 20. Selected manufacturing sectors value production measured in millions of Kyrgyz Soms

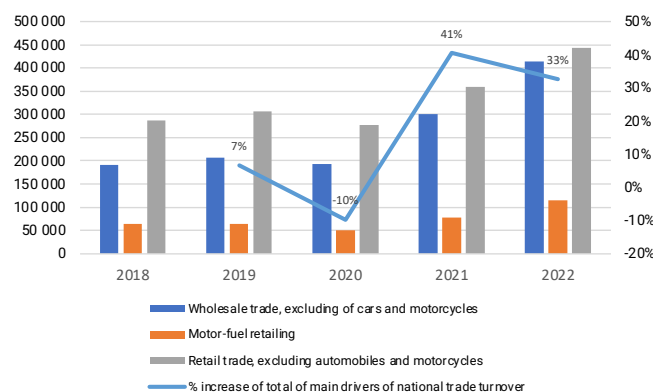


Figure 21. Main drivers of national trade turnover measured in millions of Kyrgyz Soms

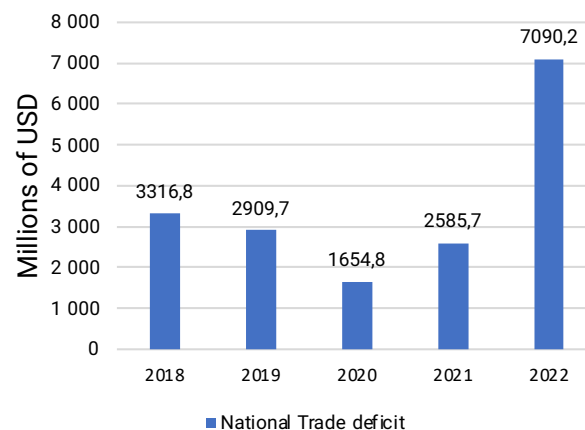


Figure 22. National trade deficit measured in millions of US Dollars

which has more than doubled in the post-pandemic recovery period when compared to the figures prior it.

**b) Transport and storage:** There was a slight dip in this economic activity in 2020 due to reduced movement and trade during COVID-19. However, plans under the One Belt One Road (OBOR) Initiative promise to boost the transport sector and have a positive ripple effect on various other areas, particularly in manufacturing and trade, as well as other economic sectors. This initiative is led by China to improve import efficiency and effectiveness into Europe via Kyrgyzstan following the Torugart-Arpa-Makmal-Jalal-Abad. However, the project is facing several challenges due to the lack of funding from the Kyrgyzstan side.

**c) Accommodation and food service:** The accommodation and food services sector, contributing just above 1 per cent to the national GDP, has maintained a steady share in the country's economic structure.<sup>110</sup> The sector faced significant challenges in 2020 due to the COVID-19 pandemic but has witnessed a resurgence in importance thereafter. The growth of this sector is intrinsically connected to the tourism industry, which possesses considerable untapped potential within the country. Data preceding the pandemic indicate a rising trajectory for tourism, with its GDP contribution climbing from approximately 4.5% in 2016 to just over 5 per cent by 2019, alongside a surge in capital investment in the tourism sector by over 50 per cent during the same period.<sup>111</sup>

**d) Financial and Insurance activities:** The rise in financial and insurance activities from 2.6 per cent in 2021 to 6 per cent in 2022 is noteworthy.<sup>112</sup> This increase appears to be more than a one-time occurrence, as the latest data, as of March 2023, indicates that the share of financial and insurance activities remains high.

**Foreign Direct Investments (FDI):** There was a 4 per cent increase in FDI from 2021 to 2022<sup>113</sup>, reflecting increased investor confidence, possibly due to the nation's economic recovery. Investment distribution underwent considerable changes. Mining's FDI share roughly doubled, the financial and insurance services' share also saw a twofold increase to 10.8 per cent, and manufacturing boosted its share by

110 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

111 ibid.

112 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

113 ibid



around 10 per cent to approximately 32 per cent.<sup>114</sup> In contrast, sectors such as ‘professional, scientific, and technical activities’ experienced a drastic reduction in FDI share from 32 per cent to about 1.8 per cent, with similar declines in service sectors and wholesale and retail trade.<sup>115</sup> Overall, this represents a strategic shift towards natural resources and financial services, indicating dynamic economic transformations with sectors like mining and financial and insurance services becoming more prominent.

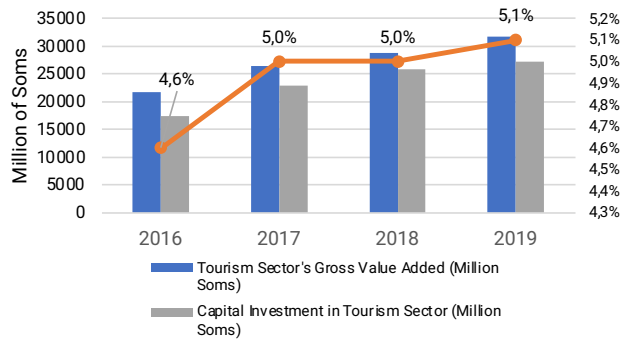


Figure 23. Indicators of tourism development measured in millions of Kyrgyz Soms

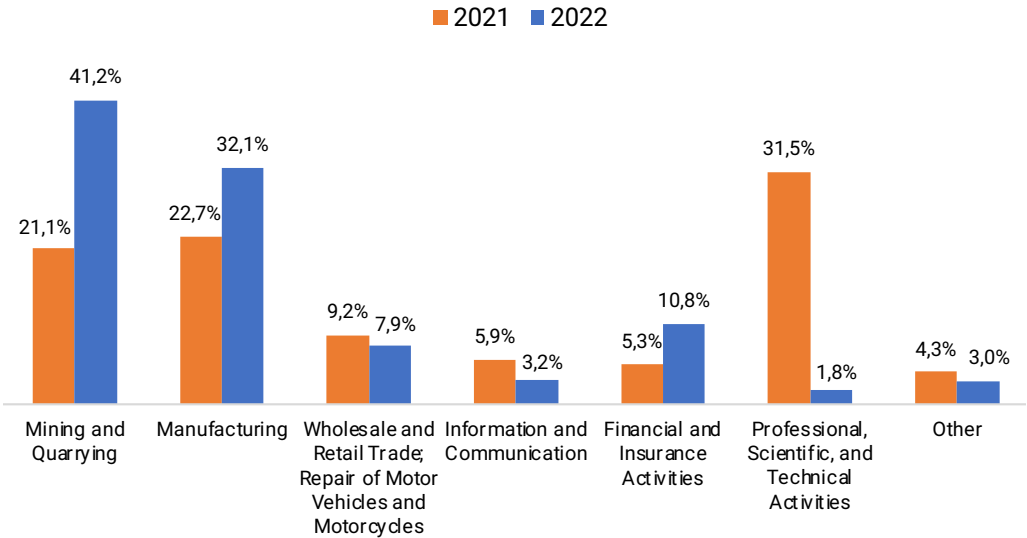


Figure 24. Distribution of FDI in the main national economic activities

114 Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

115 ibid

## Regional and Town Outline

### Overview of Naryn Oblast Economic Position

Of Kyrgyzstan's seven oblasts, Naryn contributes the least to national GDP (2.4 per cent of national GDP).<sup>116</sup> Additionally, even within Naryn's primary sectors, the oblast contributes comparatively less than other oblasts. For instance, Naryn only contributes 4.7 per cent of the national agriculture GDP, yet this is Naryn's primary economic industry.

### Breakdown of the Main Economic Activities within Naryn:

**Agriculture:** Animal husbandry dominates Naryn Oblast's agriculture industry. Naryn Oblast is one of the most important livestock production areas in Kyrgyzstan, with 71 per cent of the cultivated areas designated for forage crops. The remaining 29 per cent of cultivated areas in the Oblast are used for food crops. Barley, wheat and potatoes are the main crops.<sup>117</sup>

### Oblast Livestock-based Production:

In Naryn Oblast, the main livestock-based products are meat, milk, and wool. Each of these products has shown a positive trend in recent years. Naryn's wool and meat production are the most significant in terms of contribution to national production. In 2017, they contributed around

11.5 per cent and 11.1 per cent, respectively, increasing to approximately 13.4 per cent and 13.3 per cent in 2021.<sup>118</sup>

### Livestock-Based Production in Naryn Town

In Naryn Town, the cultivation of forage crops is minimal to non-existent, leading to a significantly lower level of animal husbandry compared to the surrounding rural areas. Recent data from the economic department of Naryn Town reveals that for the first nine months of 2023, the production of meat, milk, and wool in the town contributed to less than 3 per cent of total Oblast production for these commodities.<sup>119</sup>

### Naryn Oblast's Crop production

Among the main crops cultivated in Naryn Oblast, barley and potatoes contribute the greatest share to national total production. In contrast, wheat has a minor role and vegetables have almost no impact on the national totals.

Nevertheless, there is a gradual increase of Naryn Oblast's main crop yields towards the national yield average. Notably, barley stands out in this trend: its yield gap has notably narrowed and is now less than 10 per cent below the national average, currently at a 6 per cent gap. This contrasts with the other crops, especially vegetables, which continue to have a minimal role in the national context.<sup>120</sup>

<sup>118</sup> Economic Department of Naryn City, "The Socio-economic Situation of Naryn City for 9 Months of 2023."

<sup>119</sup> *ibid*

<sup>120</sup> Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

### Crop Production in Naryn Town

Naryn town does not engage in crop production due to the absence of agricultural land within the town limits. However, across the Naryn Oblast, the distribution among the rayons reveals that Naryn rayon contributes a small percentage to the total potato output while holding a substantial share of the Oblast's vegetable production.<sup>121</sup>

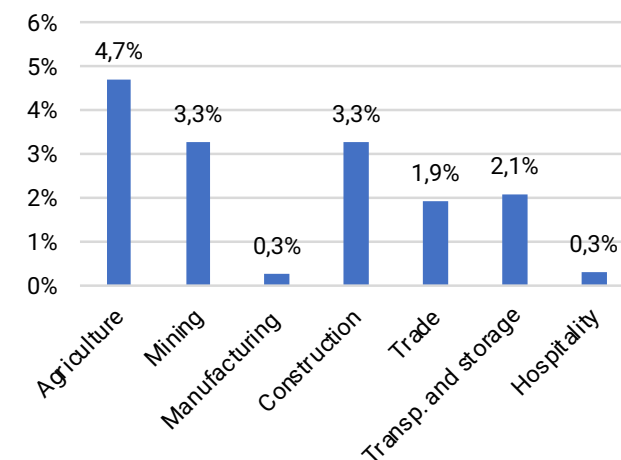


Figure 25. Naryn Oblast contribution to national GDP by major economic activities

<sup>121</sup> Economic department of the Oblast government. "Information about the Socio-Economic Development of Naryn Region for January-September 2023"

<sup>116</sup> Naryn is the second smallest oblast in terms of population among the seven Oblasts

<sup>117</sup> *ibid*

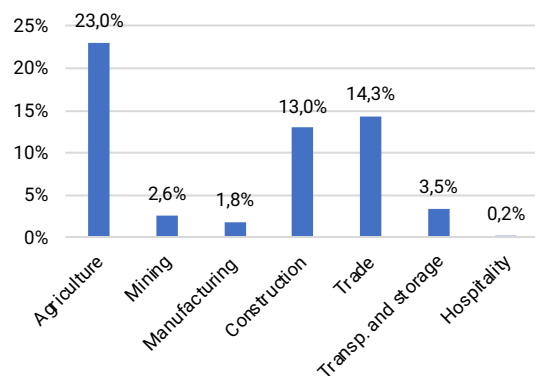


Figure 26. Naryn's Gross Regional Product (GRP) composition

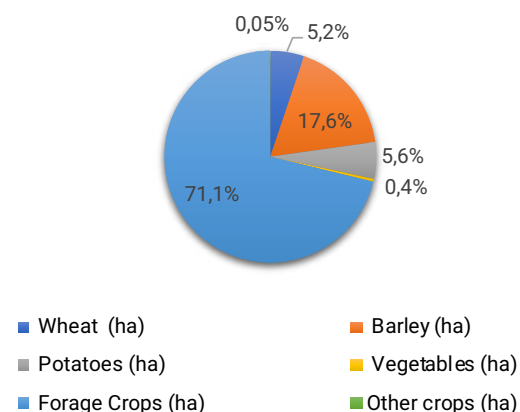


Figure 27. Cultivated area by major crops in Naryn Oblast

### Agriculture Opportunities and challenges

In the face of national challenges like food security and agricultural disorganization, Naryn Town has an opportunity to redefine its role in Kyrgyzstan's agrarian economy. The town's proximity to productive rural areas, especially being the main town of Naryn Oblast's thriving livestock sector, paves the way for it to become an epicentre for food processing and related industries. The positive trends in meat and wool production in the Oblast, along with the city's potential for food value chain improvements, can serve as a driver for economic development. These advancements could help mitigate the broader challenges of the sector by fostering a more organized and capitalized agricultural framework, with Naryn Town at its forefront.

However, a key challenge for Naryn Town is the underdeveloped food industry. Most agricultural activities focus, at the oblast level, on livestock, yet there's a significant gap in local processing. Farmers often sell their animals to middlemen for processing in Tokmok's more advanced food industry hubs, with only a very small portion processed locally.<sup>122</sup> This not only hinders Naryn's development but also affects the surrounding rural areas. Establishing local food processing facilities would increase the value of Naryn's food products, enhancing the economic prospects of both the town and its agricultural hinterlands. This would lead to increased revenue, which in turn could be reinvested in improving infrastructure, organization, and overall productivity, thereby boosting the entire region's agricultural and economic landscape.

<sup>122</sup> Source: Interview with head of economics department of Naryn Oblast, during a field mission to Naryn.

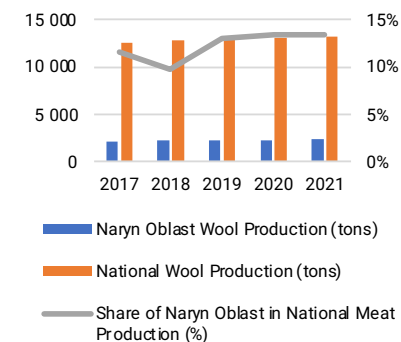


Figure 28. Naryn Oblast vs National wool production

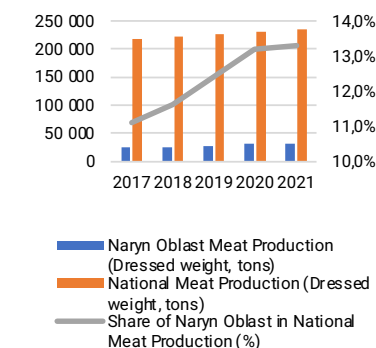


Figure 29. Naryn Oblast vs National meat production

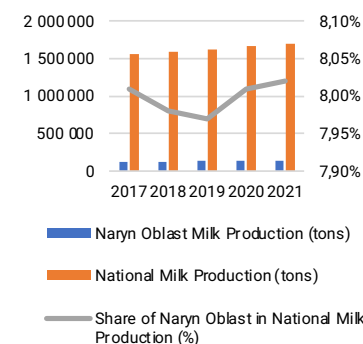


Figure 30. Naryn Oblast vs National milk production

## Manufacturing:

As previously noted, the national growth in manufacturing was largely driven by mining processing activities. In Naryn Oblast, manufacturing saw a 52.7 per cent increase from 2018, prior to the pandemic, to 2022, rising from 2,622.8 million Soms to 4,003.8 million Soms. However, despite this growth, Naryn Oblast's contribution to the national production volume was just 0.94 per cent in 2022.<sup>123</sup> While Naryn's growth rate is close to the national average, it's important to note that this was achieved without the significant impact of the mining processing industry. Nevertheless, its overall contribution to the sector is still quite small.

## Manufacturing sector in Naryn Town:

From 2021 to 2022, there was an overall nominal increase in manufacturing production. However, the physical volume index fell from 101.9 per cent to 97 per cent, suggesting a slight drop in the actual volume of production despite the nominal rise. This decline was partly due to reduced output from a major company, 'Naryn Milk' LLC, which experienced a 10 per cent decrease in its processed milk production compared to the previous year.

## Manufacturing Opportunities and Challenges

According to the recent first 9 months town report for 2023, Naryn town's business sector experienced a marked expansion, opening 17 new enterprises—an increase from the 11 combined in the previous two years. This has resulted in the creation of 246 jobs, vastly exceeding the 177 jobs generated in 2021 and 2022. Moreover, there was a substantial investment of 118,304.0 thousand Somss during the same

<sup>123</sup> Source: National Statistical Committee of the Kyrgyz Republic, [www.stat.kg/en/](http://www.stat.kg/en/)

period.<sup>124</sup> Out of the 16 newly opened enterprises, 10 are manufacturing-based, with textile manufacturing emerging as the predominant type, while regarding the food sector, one enterprise related to milk processing was opened.

While the specific nature of these new industrial enterprises has not been explicitly identified, the surrounding agricultural economy, predominantly driven by livestock, presents unique manufacturing opportunities where investments seem to have started taken place. Insights from local interviews<sup>125</sup> suggest potential development opportunities in food processing, leather and related industries. Such industrial ventures, aligned with the region's agricultural strengths, could represent strategic initiatives to tap into the city's surrounding resource base, fostering a more integrated economic environment by improving the rural-urban linkages.

## Wholesale and Retail Trade

Naryn Oblast has witnessed a notable increase of around 21 per cent in wholesale and retail trade turnover during the first nine months of 2023, compared to the same period in the previous year.<sup>126</sup> In parallel, Naryn town has seen a similar trend, with its retail trade turnover growing by 20.8 per cent during the same timeframe.<sup>127</sup>

<sup>124</sup> Economic Department of Naryn City, "The Socio-economic Situation of Naryn City for 9 Months of 2023."

<sup>125</sup> Source: Interview with head of economics department of Naryn Oblast, during a field mission to Naryn.

<sup>126</sup> Source: Economic department of the Oblast government. "Information about the Socio-Economic Development of Naryn Region for January-September 2023".

<sup>127</sup> Source: Economic Department of Naryn City, "The Socio-economic Situation of Naryn City for 9 Months of 2023."

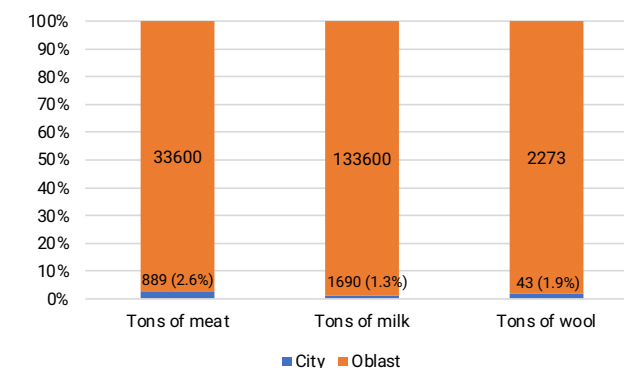


Figure 31. Share of Naryn City's livestock-based products to Naryn Oblast totals

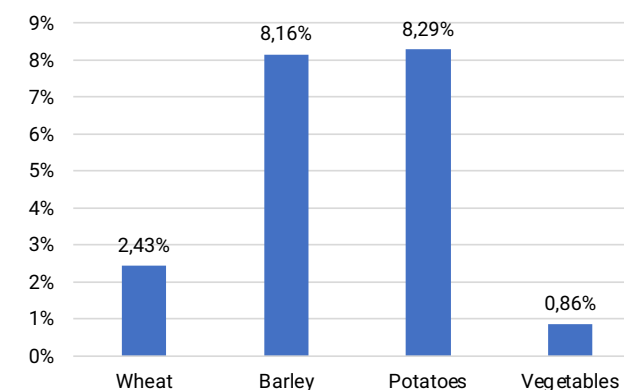


Figure 32. Share of Naryn Oblast's totals to National Totals



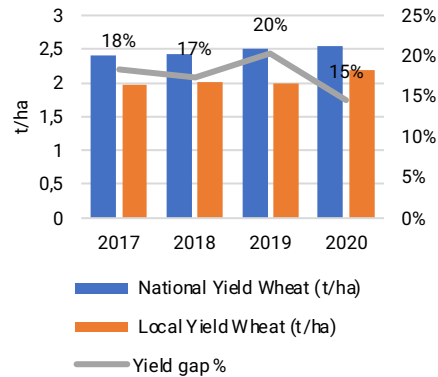


Figure 33. Naryn Oblast wheat yield

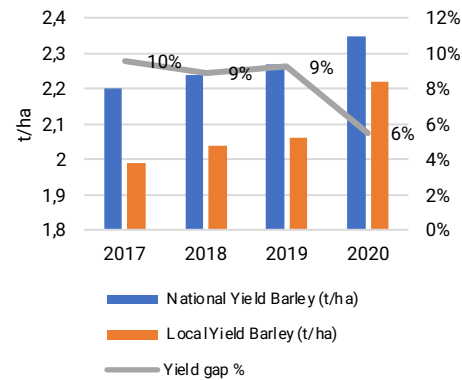


Figure 34. Naryn Oblast barley yield

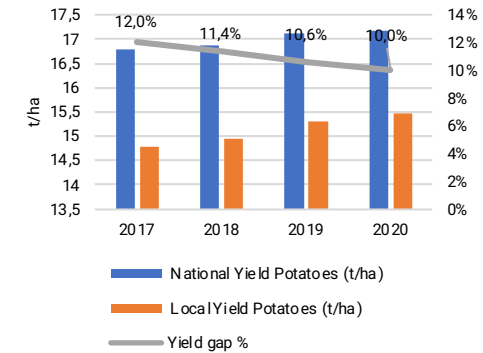


Figure 35. Naryn Oblast potatoes yield

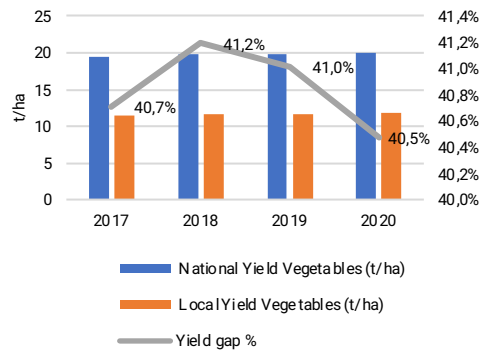


Figure 36. Naryn Oblast vegetables yield

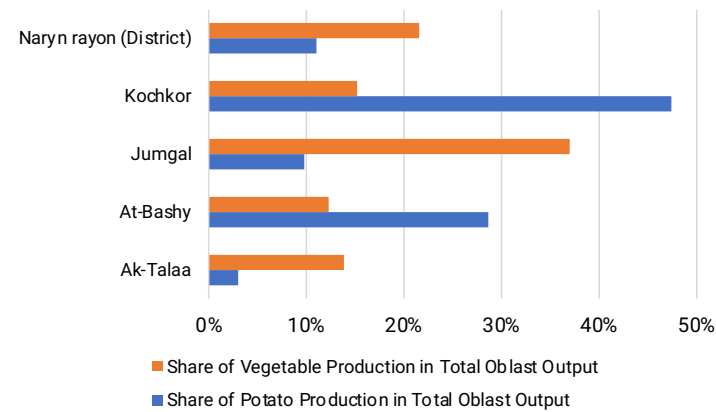


Figure 37. Share of selected crops production across Naryn Oblast districts

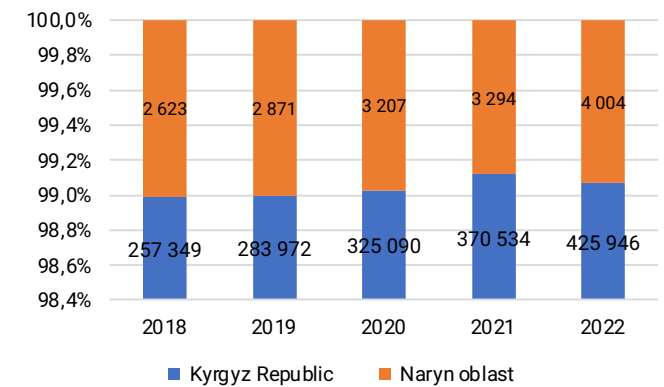


Figure 38. Naryn Oblast contributions to the National manufacturing sector in millions of Soms

## Wholesale and Retail Trade Opportunities and Challenges

In Naryn town, the trade sector presents a significant opportunity for economic development, bolstered by its strategic location and the recent increase in retail turnover, indicating a thriving consumer market that could position the town as a key logistics hub. The potential for diversification, especially in areas that align with the region's agricultural base such as food processing, could further propel trade growth. Additionally, the recent influx of investment underscores the economic confidence in the town's trade potential.

While these prospects are encouraging, Naryn faces challenges such as the national trade deficit, which could temper the momentum of trade growth as future economic policies necessary to address the trade imbalance might be implemented. Infrastructure enhancements are crucial to support not only the increased trade activities but also the efficient operation of logistics networks necessary for Naryn to realize its potential as a central logistics hub. Strengthening economic integration with neighbouring markets and enhancing the competitiveness of local goods and services are vital for tapping into the town's full trade potential.

## Tourism

In the wake of the COVID-19 pandemic, Naryn Oblast's tourism has not only rebounded but grown to unprecedented levels. For the first 9 months of 2023, the number of tourists in the region increased by 187.4 per cent compared to the same period in 2019, the year before the pandemic, accompanied by a 151 per

cent surge in tourism revenue.<sup>128</sup> This significant uptick in tourism activity marks a robust turnaround from the dramatic 96 per cent decline in tourist numbers and a 94 per cent drop in revenue during the pandemic in 2020.<sup>129</sup> These figures underscore a strong recovery and growth trajectory for the tourism sector in Naryn Oblast post-pandemic.

## Tourism Opportunities and Challenges

Naryn Town, serving as the administrative centre of the Naryn region in Kyrgyzstan, presents significant opportunities for tourism development. Strategically located near the China border and along the Bishkek-Torugart highway, it acts as a gateway to various natural and historical attractions. Key sites include the Tash Rabat Caravanserai, an ancient Silk Road landmark; the picturesque alpine Song-Kul Lake; Sary-Chelek Nature Reserve in the Tien Shan Mountains; the historic Cholpon-Ata Petroglyphs; and the scenic Tash-Kumyr Valley. These attractions offer a rich blend of cultural history, stunning landscapes, and outdoor activities.

However, the region and the town, both face challenges such as the need for better infrastructure, effective marketing, sustainable tourism practices, community engagement, and capacity building in the local tourism sector. Addressing these challenges can help Naryn Town enhance its role in the tourism industry and contribute to regional economic growth.

<sup>128</sup> Data source: Economic Department of Naryn Oblast

<sup>129</sup> ibid

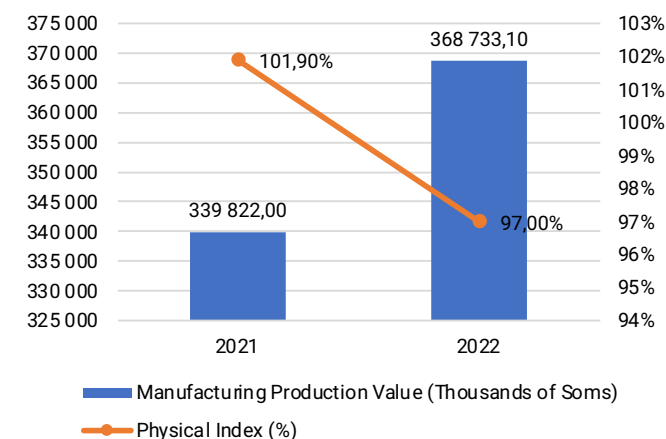


Figure 39. Naryn City's manufacturing industry

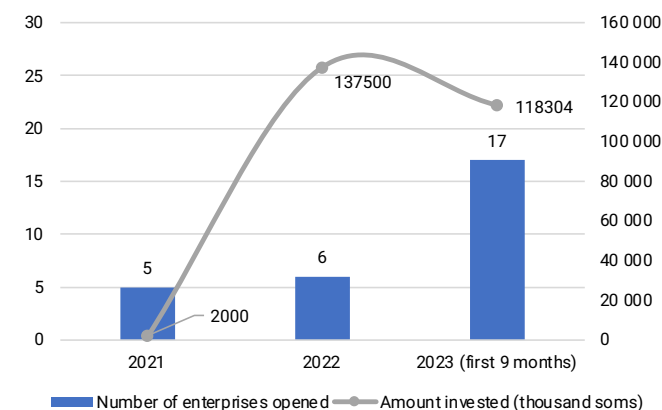


Figure 40. Investment in Naryn City

## Local Economic Development Vision for Naryn

Considering the strengths of the socio-economic context of the region, the National Development Strategy (2018-2040), and the efforts of local and international stakeholders, the following areas have been identified as having significant synergy and potential for local economic development:

**1) Tourism:** The growing interest in Naryn's natural beauty as a tourist destination, as shown by the previous analysis, brings opportunities for expanding the tourism sector. There is potential for developing adventure, eco-tourism and agri-tourism, alongside improving existing tourism offerings. However, realizing this potential requires overcoming several challenges. Key areas for development include upgrading infrastructure to support increased tourist activity (see 2.1. Planning Context), implementing targeted marketing campaigns, embracing sustainable tourism practices to preserve the natural environment, encouraging community participation in tourism initiatives, and enhancing the skills and capabilities of those working in the tourism sector. Addressing these areas is essential for maximizing the benefits of the tourism boom while ensuring long-term sustainability and community benefit.

**2) Agroindustry:** At the heart of Naryn City's economic transformation lies the potential for a robust agro-industrial sector, focused on meat and milk processing, along with leather production. This potential is supported by the surrounding agricultural landscape, which is predominantly focused on livestock with positive trends in production and productivity. The establishment of a

local food processing industry in Naryn could help tackle regional food security issues by decrease reliance on food imports. Additionally, recent improvements in road connectivity have bolstered logistical capabilities, and Naryn's proximity to China's Xinjiang region presents new market access opportunities, positioning the town to take advantage of these developing sectors.

**3) Logistics Hub:** Naryn's proximity to the Torugart Pass positions it to become a pivotal logistics hub for China-Europe trade. This strategic location facilitates access to the Chinese market and supports the export of local and regional products. As a central trade route point, Naryn could benefit economically from logistics job creation, enhanced trade connections, and transit-related revenue. Plans are underway in the region to bolster connectivity as part of the One Belt One Road (OBOR) initiative, including the "China-Kyrgyzstan-Uzbekistan Railway" project, which aims to shorten the delivery time of goods from China to Europe, which would benefit not only Naryn but the country. However, capitalizing on these opportunities requires efficient logistics, comprehensive infrastructure development, and the incorporation of local industries into wider trading networks.

**4) University-Town:** Envisioning Naryn as a university town centres around leveraging the University of Central Asia, supported by the Aga Khan Development Network,

as a driving force for local economic development. The presence of the university is a catalyst, enhancing the skills and expertise vital for strengthening existing industries and fostering emerging ones, particularly in the sectors identified as key growth areas. By transforming into an academic hub, Naryn positions itself as an attractive destination for investment, innovation, and entrepreneurship. The university's role is crucial in bridging the gap between education and industry, providing a workforce equipped with the knowledge and skills necessary for the tourism, agroindustry, and logistics sectors. The challenge lies in forging effective collaborations between the academic and industrial spheres, ensuring the alignment of educational programs with the specific needs of these sectors, and fostering an environment conducive to practical, hands-on learning experiences. This alignment not only enhances job readiness but also drives innovation and research relevant to local economic growth. Therefore, the development of Naryn as a university town is not just about educational expansion but about creating a dynamic ecosystem where education, industry, and community development converge for mutual benefit and sustainable growth.





## 6. Planning context

The planning context of Naryn is the basis for crucial insights into the city's spatial dynamics and their impact on its vibrancy, connectivity, compactness, and resilience. Understanding how factors such as, land use, urban form, and infrastructure influence the city's functionality and inclusivity is essential for informed decision-making and prioritising interventions that promote sustainable development. Given Naryn's unique geographic and demographic characteristics, planning plays a critical role in shaping equitable access to services and opportunities.

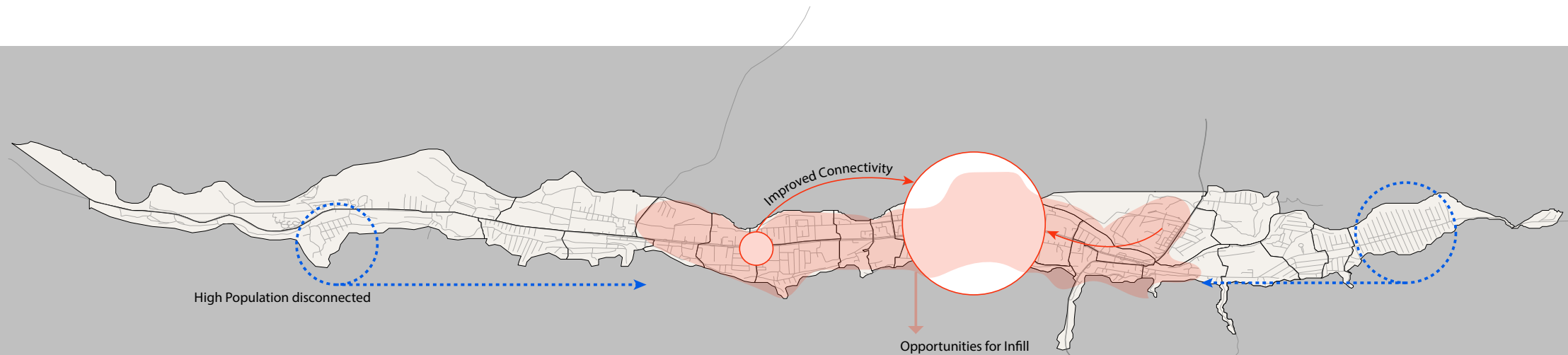
This assessment incorporates a people-centred spatial analysis, using population data to evaluate land use patterns, road networks, walkability, and transport infrastructure. It also examines the provision of public and green spaces, education, healthcare, and utilities such as water, sewage, energy, and electricity, to understand their role in supporting urban resilience. Additionally, the analysis considers complex vulnerability profiles, including hazard exposure and income sensitivity, highlighting how these factors intersect to influence Naryn's capacity to adapt and thrive.

This chapter begins by outlining the broader spatial planning context before focusing on the specific challenges and opportunities within Naryn, offering a foundation for targeted, resilience-enhancing solutions.









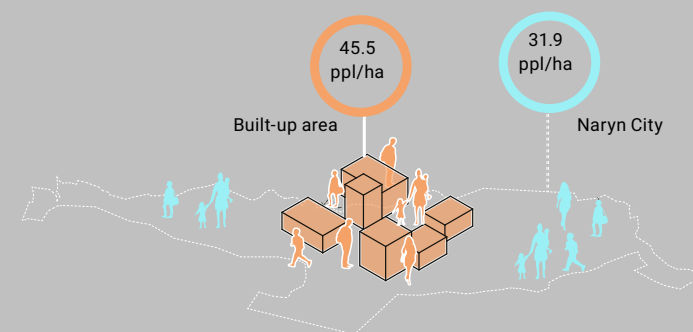
## People-Centred Spatial Analysis

An Integrated Spatial Planning approach begins with a people-centred assessment, focusing on how the city is currently inhabited and how it will be inhabited in the future. This approach ensures that planning decisions are grounded in the realities of the population's distribution, movement patterns, and needs. By using population data as a foundational framework, the analysis becomes responsive to the specific challenges and opportunities that emerge from how people live and interact with their urban environment.

Population trends are central to understanding urban dynamics, as they provide insights into areas of high and low demand, density, and service usage. In the case of Naryn, population fluctuations driven by seasonal migration and student flows are key factors influencing the city's growth and planning. Naryn's linear urban layout and topographical constraints further shape where people can live, leading to an uneven and sometimes fragmented distribution of population density across the city. This uneven distribution, particularly in terms of residential typologies—such as high-rise buildings versus single-storey dwellings—reveals

both deficits and inefficiencies within the urban fabric.

A people-centred spatial analysis, therefore, helps identify key areas where infrastructure and services need to be enhanced to support more balanced growth. By understanding how population distribution aligns with urban form, planners can propose more effective, context-specific interventions that address local needs and priorities.



## Key Findings

Naryn has an estimated population of 62,279 people. The average population density within the city's administrative boundaries is 31.9 people per hectare, which is relatively low compared to global urban benchmarks. However, these benchmarks are not a direct guiding factor in Naryn's case but offer a reference for considering more efficient density.

The population is primarily concentrated in the town centre, with higher densities along the main axis (Lenin Street). However, areas like Tosh Bulak and Jany Jer, located on the periphery of the town, also show significant population numbers. This suggests that growth could be better distributed across the city, with a gradual increase in population density moving outward from the central and secondary nodes. This approach could help optimise the provision of services and create vibrant, active neighbourhoods by reducing travel times and encouraging pedestrian mobility.

Certain pockets of high population density, such as in Balasagyn and Gorodok, could benefit from improved connectivity to the town centre, potentially becoming secondary urban nodes with enhanced pedestrian infrastructure.

Naryn also features several multi-storey residential buildings, typically along the central road. While these buildings provide higher residential density, they should not exceed five floors to comply with fire safety and seismic standards. Incorporating community-focused design elements—such as semi-public spaces and mixed-use ground floors—could further enhance these areas by fostering greater pedestrian activity and community engagement.



### i. Population Density

Using survey data which included georeferenced population numbers and floor numbers, a correlation was found between the number of people, and the size of residential area (a correlation of 0.7). The residential area was calculated both from the building footprint area, as well as the number of floors in each building, allowing an outcome that is representative of people per cubic metre. Applying the formula to all residential units across the town provided the population density distribution.<sup>130</sup>

130 Not only did the national statistics not reflect existing population (due to the lacking method of assessment, from field observations and confirmation from the Mayor's office), but varying and conflicting datasets also meant that the team opted for the recent survey data as the most reliable and recent source of existing population. The assumption used in this assessment was that the population

distribution is strongly linked to the availability of built-up area to be occupied. The higher the volume of the residential built-up area, the higher the probability of population concentration. The limitation acknowledged in this approach is that the population is not always evenly distributed according to the built-up area. Assuming this has limits on the identification of areas experiencing overcrowding (large numbers of population concentrated in areas providing limited built-up area).

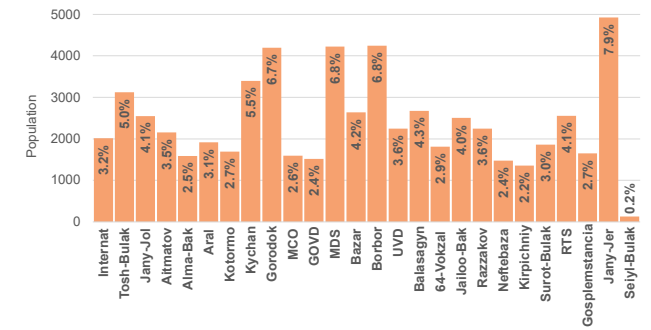


Figure 41. Number of population within each sub-district, and the population of each sub-district as a % of the total

The total population calculated is approximately 62,291.

Jany-Jer, has the highest population number, of 4,923 people, whereas Seiyi-Bulak has a population of 130 people. 39 percent of the total population of Naryn live within Jany-Jer, MDS, Borbor, Gorodok, Kychan and Tosh Bulak.

The average population density is 47.6 for the built-up area in Naryn, and 39.5 for the administrative boundary.

This is relatively low, considering global benchmarks for urban density to provide efficient service delivery and sustainable growth, but needs to be considered in relation to the population density as it is distributed in the town.

When comparing these two data sets, it is apparent that there is a weak statistical relationship ( $R:0.17$ ), meaning that they are not strongly correlated. For example, Jany-Jer shows a high population, but a low density.

This area is predominantly single storey residential units. In comparison, (when looking at Figure 45 – population and population density comparison) 64-Vokzal has one of the highest average population densities, but a relatively low population. In fact, those sub-districts with the highest population density are MDS (92.9), Kychan (80.9), Gorodok (77.0), Razzakov (75.4) and 64-Vokzal (75.3), and are also those that are closer to the central axis, Lenin Street.

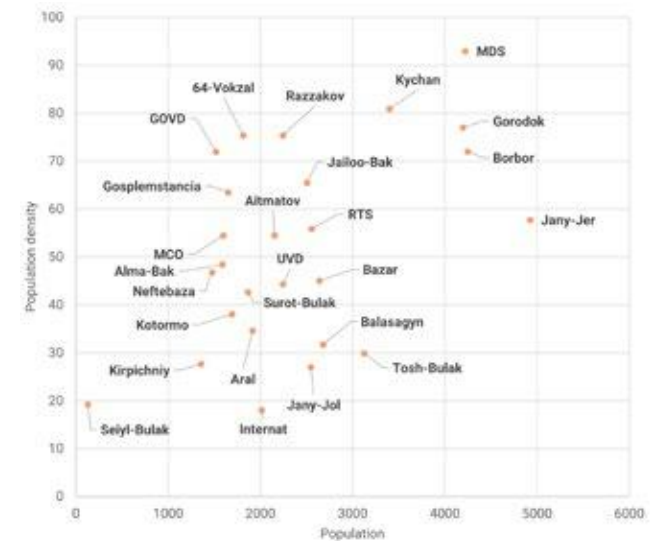
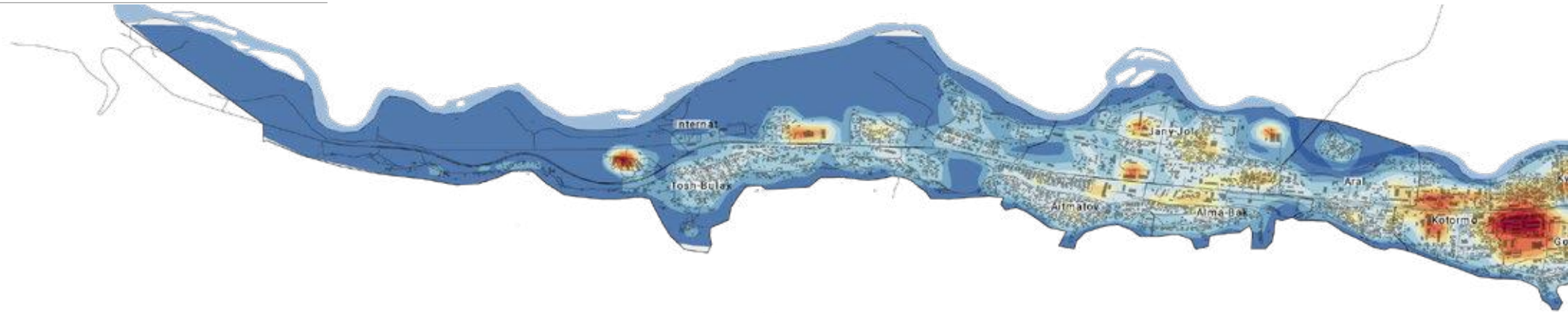


Figure 42. Population Density and Population Number per sub-district



## ii. Built Up Area Density

The average built-up area density is 1387.7 m<sup>3</sup>/ha within the administrative boundary area and 1808.1 m<sup>3</sup>/ha within the urbanised area.

This is further detailed in the following analysis which highlights the built-up area volume and density across sub-districts.

Figure 46 shows that more than half of the built-up area in the town is found in 8 sub-districts.

The analysis shown in Figure 47 highlights high-volume building units within each sub-district. For example, there is an average building volume which decreases toward the East and West of the town, but increases in the town centre, with the highest building volume average in UVD. However, in addition to that, this graph highlights the 'outliers', that don't follow the average for that sub-district. That is apparent in Internat, Gorodok, MCO, MDS, Borbor, UVD, Balasagyn and Neftchaza.

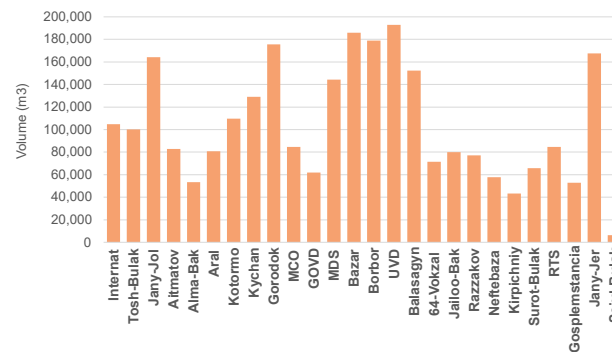


Figure 43. The total m<sup>3</sup> of building volume within each sub-district

This suggests that there is an 'unbalanced' building typology and size in these sub-districts, with, perhaps, a majority of low or small building units, and a few large residential apartment blocks. When comparing these 'outliers' to the population density, it helps to suggest that these high building volume units in this graph may relate to non-residential institutions or facilities.

The figures alongside explain the distribution of population density within sub-districts. As it can be

seen, Gorodok inhabits the most dense areas in Naryn in terms of population density, followed by Balasagyn. This is one of the notable outcomes as Balasagyn has one the lowest population density in the town (6<sup>th</sup> sub-district). Comparing this result with average building volumes indicates a form of spatial segregation.

After considering population and the built-up area of the town, the following analyses provide a deeper understanding into the layout of the city in regard to land use.

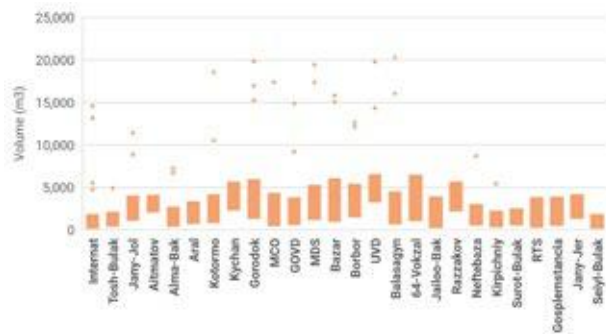
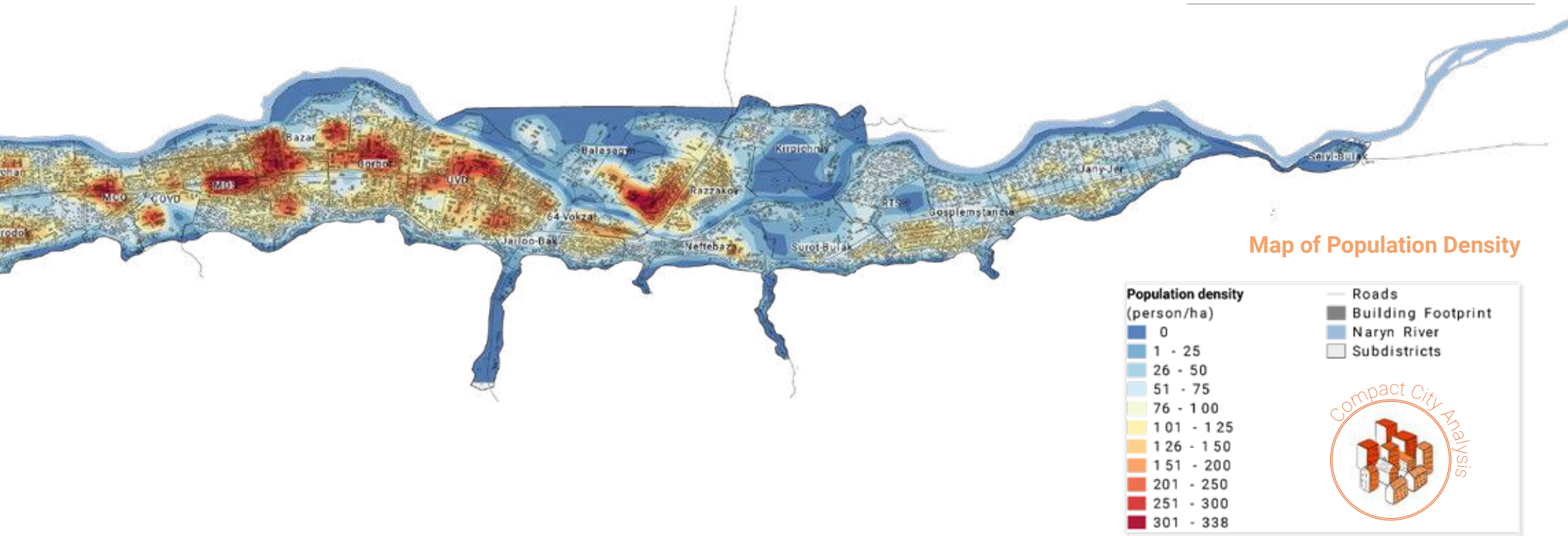


Figure 44. Average building volume within each sub-district (organised from West to East to replicate the city layout), highlighting higher volume building units as 'outliers' within each sub-district

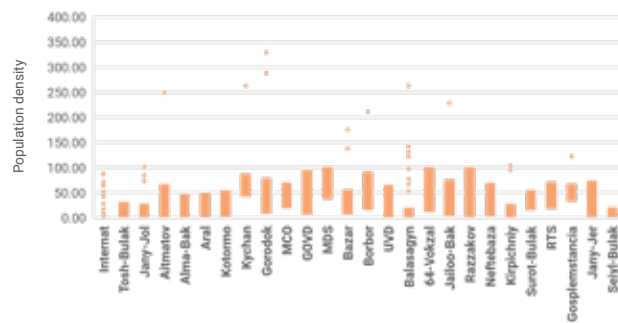
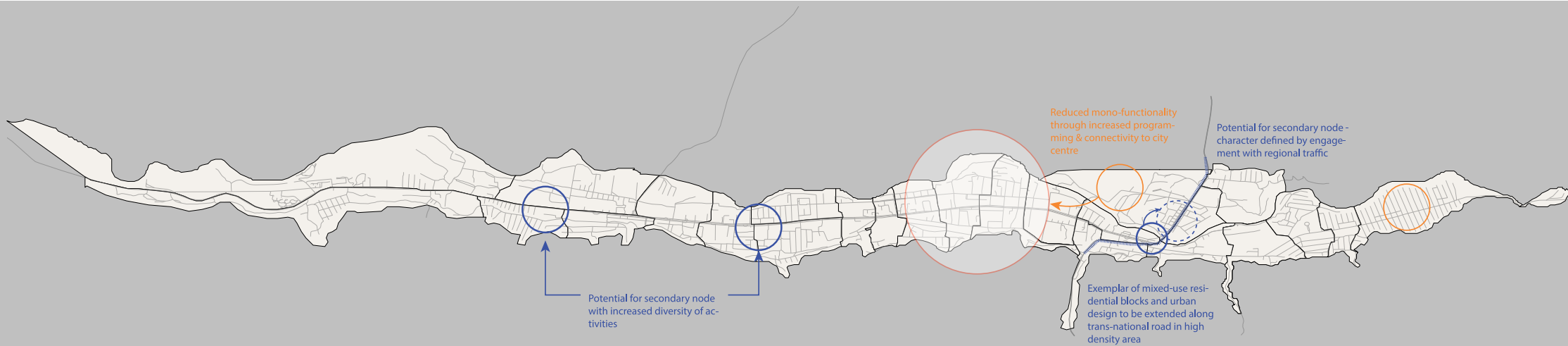


Figure 45. Population Density by sub-district (organised from West to East to replicate the city layout) with average density (rectangle) and outliers (dots representing smaller areas within the sub district that are not within the average density)





## How Land Use within Naryn Impacts Vibrancy and Connectivity

Given the way the population densities are distributed in Naryn with its linear layout, the way land is used plays an important role to achieve the five City Objectives. Limited land, not only as a result of topographical restrictions, but also due to ownership (e.g. available public land vs. private) must be efficient and effective to serve the population, generate economic development, and enhance environmental resilience.

Most of Naryn's land is used for residential activities and development, indicating a missed opportunity to generate vibrancy through interaction between people,

activities and uses. It further highlights a potential issue for people to be able to move through the city, and equitably access different facilities and activities. This would require well-connected street and road networks with sufficient permeability that makes different parts of the city conveniently accessible to all, whether through walking or private or public transport.

A resulting outcome of this inefficient land use is the creation of a monofunctionally structured city with poor connectivity and limited opportunity for agglomeration, interaction, and exchange.

## Key Findings

Most of Naryn's land uses are residential (70.1 percent of the built-up area). Public spaces occupy the next largest share of the built-up area (13.3 percent).

There are a number of military sites located within and to the East of the city centre. Some industrial areas are located within the built-up area of the city, and there is a number of under-used or non-functioning brown field sites. In some cases, these are being prepared for new housing development sites.

Alma Bak and Balasagyn have the highest concentration of one land use - in both cases this is related to parks. These may cause monofunctional areas that can be

improved, in the case of the public park in Balasagyn, through smaller units of increased activity diversity - for example, through programming or education and commercial activities, and through improved connectivity between this sub-district and the city centre.

Apart from UVD, there is also high diversity of land uses in Vozkal, Kotormo and Jany Jol, indicating a potential for secondary nodes. Kotormo and Jany-Jol have a high land use diversity and concentration, however, this is predominantly industrial land use. This suggests that smaller units of diverse uses could improve the vibrancy and pedestrian activity in these two areas,. for example pocket parks, small commercial units or mixed-use development, to improve the functionality of these two areas as neighbourhood centres.

Vozkal, although has potential to provide a secondary node, or an extension of the city centre, must take into account the trans-national highway that passes through it. The character of this node, therefore, can benefit from the potential commercial activity from this transport route. Vozkal also provides an example of high density apartment blocks and mixed-use development that can be used to improve high density buildings in other areas of the city to improve the vibrancy of secondary nodes and high density residential areas.

Jany Jer, with a high population (referencing the previous analysis) may lack vibrancy due to predominantly residential land uses.

Land ownership is generally private, and individuals are able to parcel and sell their land. Property and land ownership is managed by the local government. Often, private owners use walls and gates to demarcate their land to provide extra security from informal land development. Government and commercial buildings are focused in the city centre.



## Land Use Analysis Approach & Outcome

### i. Land Use Distribution

Most of Naryn's land uses are residential (70.1 percent of the built-up area).<sup>5</sup> Public spaces occupy the next largest share of the built-up area (13.3 percent). Industrial (4.5 percent), commercial and mixed-use (2.7 percent and 1.32 percent), education and health (2.6 percent and 1 percent) and administrative (2.45 percent) land uses occupy a much lower proportion of the built-up area.

To examine the variety and distribution of land use in Naryn, the diversity index (the Simpson Index) is used by taking into account the size and the quantity of the land use. This analysis also allows to define the monofunctional areas. A 'better' distribution would show a more even proportion of different land uses

within a sub-district. A 'worse' distribution would show an uneven proportion, with one land use much higher than the others. This could suggest some degree of fragmentation due to a single and large percentage of one land use in one area of the town.

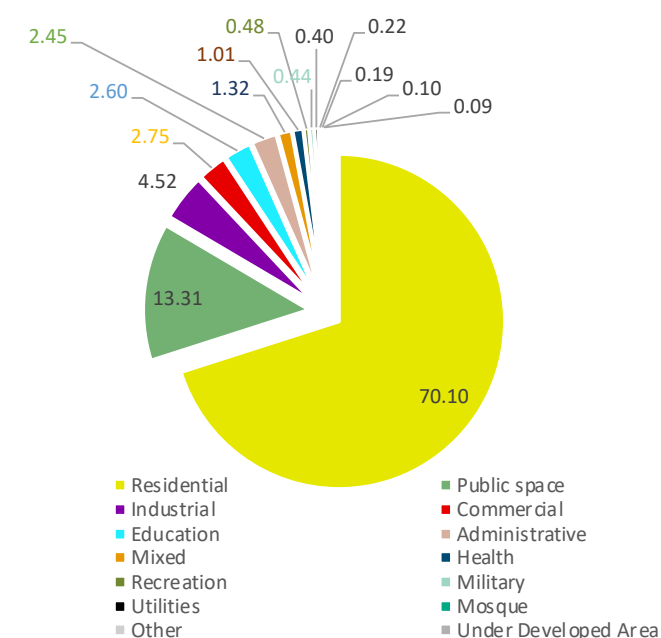
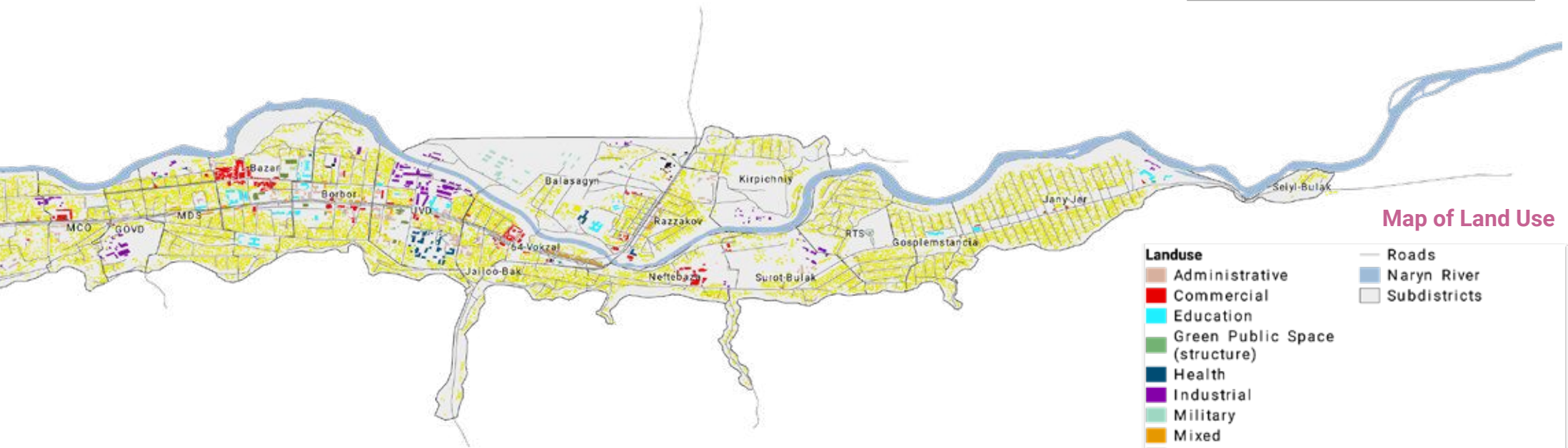


Figure 46. Land Use distribution within built-up area

<sup>5</sup> The data used in this assessment is based on the approved masterplan map which shows the existing land uses and is cross-checked against open-source data.



Map of Land Use



Map of Underutilised Land





## ii. Land Use Diversity

Different land uses that were included in this analysis were residential, commercial, mixed-use, administrative, health, education, industrial, public space and recreation. Land uses that were excluded from this analysis include military land, unoccupied land, and utilities. Isolated diverse land uses appear at the far East and West of the town, which relate to the UCA campus, and to the education facility and public space in the East.

Within three sub-districts, Bazar, Borbor, and UVD, UVD has the least percentage of the built-up area occupied by residential uses (38 percent), a lower population, and a higher amount of industrial and green space. Borbor has a much higher residential category (76 percent). Bazar is the main commercial area as it allocated 17 percent of its built-up area for commercial use, representing the 33.9 percent of the total land allocated to commercial use.

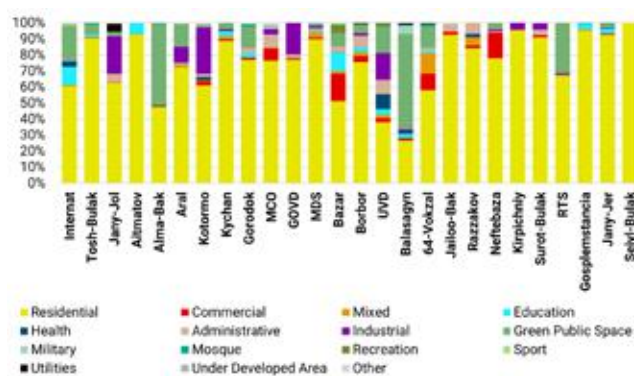


Figure 47. % of each land use found within each sub-district, highlighting the types of land uses within each sub district, as well as their proportion within that area

The diversity index is a value between 0-1. The highest diversity index in Naryn is 0.75 in Bazaar, however when showing the average for each district, UVD has the highest diversity of land uses.

Diversity values decreases towards both the west and the east. Jany Jer, for example has a potentially monofunctional land use pattern and may lack vibrancy, especially considering the distance this neighbourhood is from the town centre. Towards the west, the sub-districts of Kotormo and Jany-Jol emerge as those offering the greatest diversity.

In both cases this is due to the significant allocation of land to the industrial category (21.3 percent of Jany-Jol and 28.9 percent of Kotormo). In the East, 64-Vokzal has a relatively higher diversity value, with the largest amount of mixed-use across the town (12.6 percent).

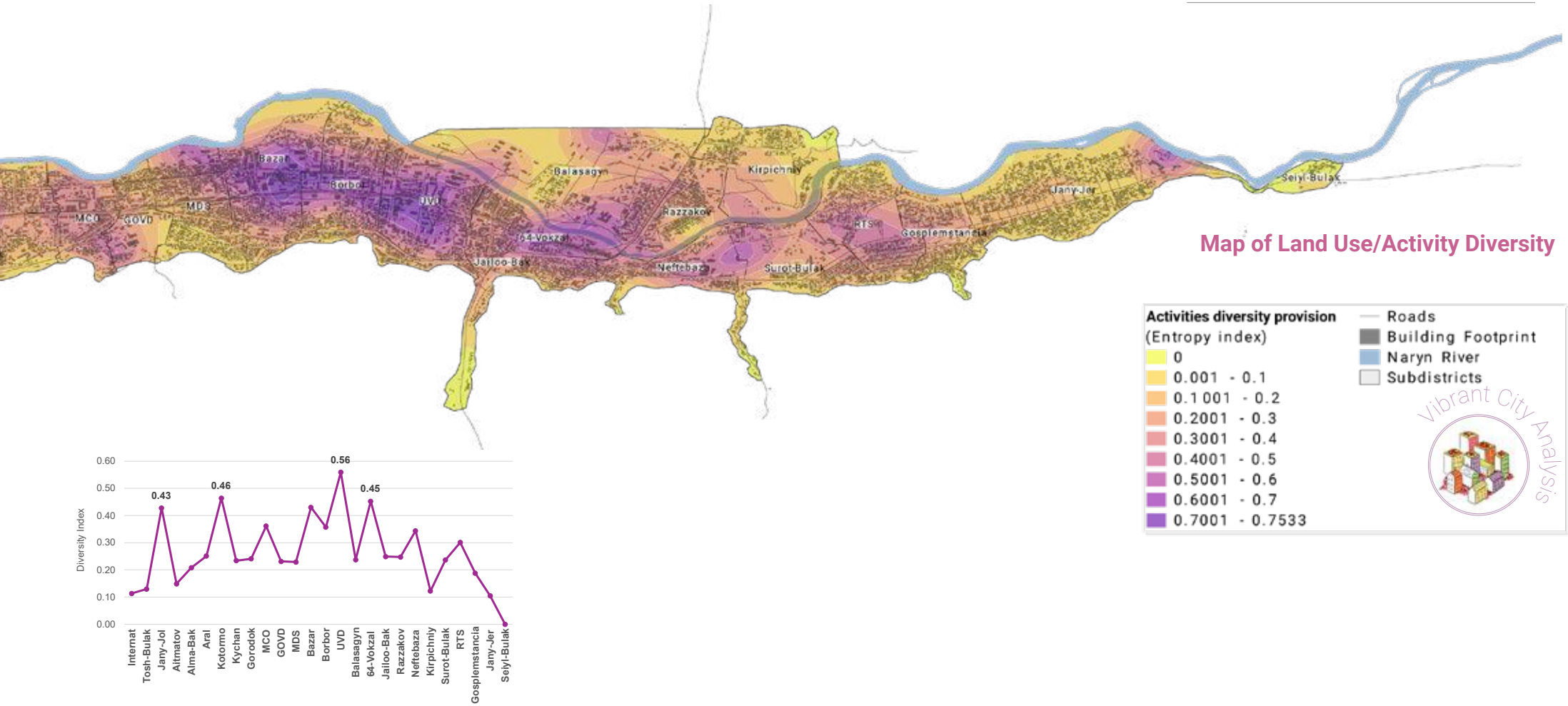


Figure 48. Average Land Use Diversity within each sub-district



### iii. Land Use Concentration

The concentration of activities is another analysis to understand land use. Similar to the activity diversity, this analysis considers land uses that include commercial, mixed-use, administrative, education, health, industrial, religious (mosques), recreation, sports, and public space. The difference between the two analyses is that activity diversity considers the size of the activity (type of land use) whereas concentration of activities considers the volume of land uses the volume (meaning the  $m^3$  of the different land uses).

When considering not only the area but also the volume, the percentage assigned to residential use decreases by 10.7 percentage points and industrial, education and commercial uses increase by 2.8 percent, 2.9 percent and 1 percent respectively. This is expected as these land uses can occupy larger building units and areas of land. This analysis highlights the extent to which UVD has a higher concentration and diversity of land uses. In addition, the areas highlighted as high concentration, but lower diversity are usually due to larger green spaces, for example in Balasagyn.

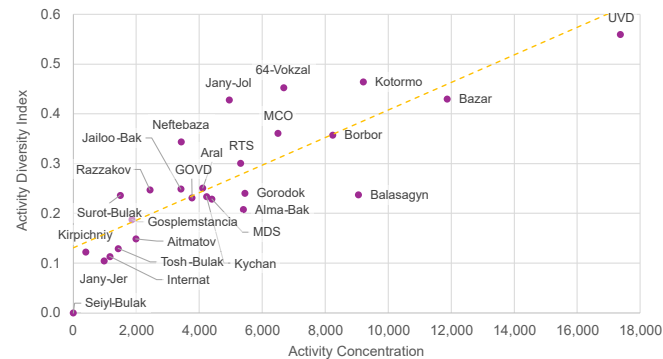
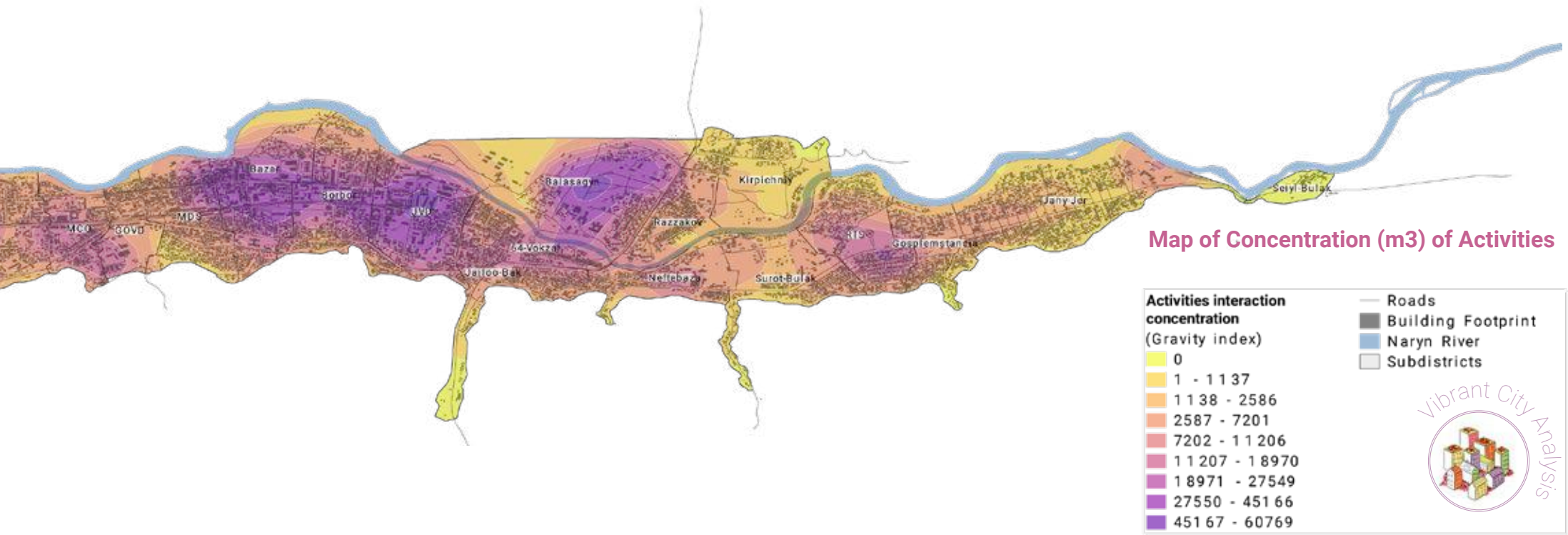


Figure 49. Comparison of Activities Concentration and Diversity







## Road network and walkability

Due to the layout of the town, the central Lenin Street serves as the main artery where the majority of transport and pedestrian traffic of the town is concentrated. This means that the network of roads and streets in Naryn is especially significant to connect people to places, opportunities and services. The network and resultant ability of people to move through the city not only has spatial implications, where some areas are more accessible and connected than others, but could also have socio-economic, health and well-being impacts for the city. Particularly for its regional and strategic location, Naryn's connectivity is of relevance for its economic development too.

## Key Findings

Road surfaces are not clearly demarcated and there are few traffic lights at key intersections on this primary road. Trees, hedges and water irrigation channels

separate car traffic from pedestrian movement, there are limited pedestrian road crossing markings, however without accompanying vehicular traffic signalling. The IHA reports a high level of traffic incidents.

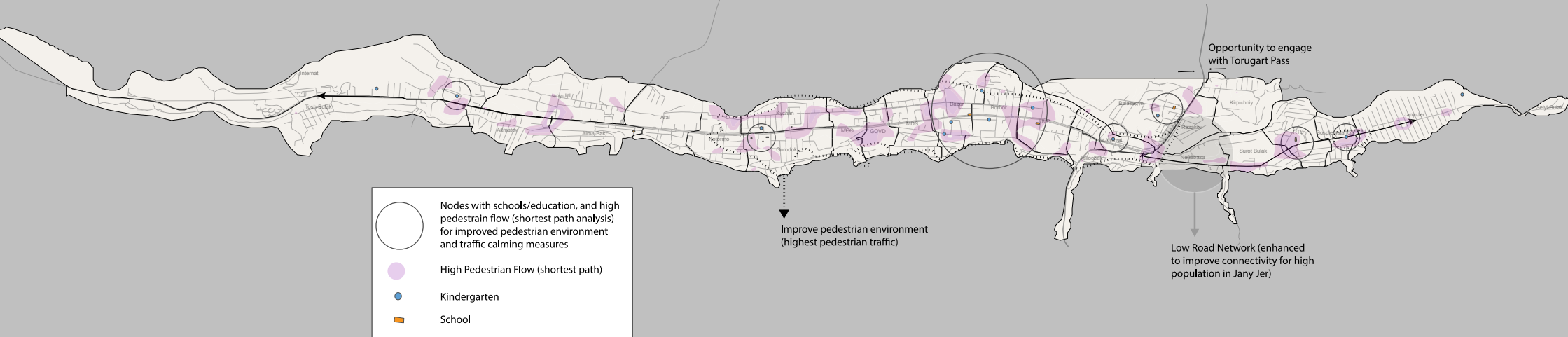
There is heavy traffic flow on the secondary route that runs north of the town centre and through the central marketplace. This is in part due to the high degree of economic activity, unregulated parking, as well as due to large service vehicles and trucks carrying produce to and from the market.

Whilst there is a good existing road network, repairs are needed across all roads. Data collected from sector specialists shows that of the 45km of road within the town, only 13km are in good condition. According to information received from the Naryn Mayoral Office, National Government will be responsible for undertaking 10km of the required maintenance and upgrade projects, and funding is still to be secured for the rest of the required infrastructure.

On an oblast level, a road of national significance, Torugart Road, connecting Kyrgyzstan with China, passes through Naryn town in the north-south direction, and a local road, connecting settlements Iyri-Suu and Dostuk, passes from east to west. The Naryn airport is currently not functional, but plans are in place to reinstate the facility, which will enhance the connectivity and role of Naryn on a wider scale. There are currently no provisions made for national scale traffic on this road.

The main mode of public transport is provided by an electric bus system that runs along Lenin Road with numerous formal bus stops.

Connections are also provided via min-bus "matshuka" routes, with private metered cabs and informal community rideshare options servicing the gap and margins. The approved masterplan suggests future mass-passenger transport for the town using trolleybuses and buses. The mayor's office has also suggested upgrading the electric bus system and removing electric cables to introduce battery-run e-busses.



Pedestrian pathways are mainly found on either side of the primary road, Lenin Road, as well as near the Regional Hospital. However, in some cases these have not been maintained. Most roads are flanked by dust pathways. Due to variations in the ground height without pedestrian pathways or irrigation channels, and in some cases with buildings at a much lower ground-height to the road, mud and debris flow and flooding is not effectively managed and causes substantial damage to mobility networks and buildings.

There are no bicycle lanes, although community members would consider this to be an efficient mode of transport.

The town's road network suffers from lack of maintenance. There are pockets of relatively un-permeable areas, and new roads to connect existing roads are recommended in existing or new 'centres' of activity, to more efficiently use the existing quantity of roads, to improve connectivity in these areas and reduce 'dead ends' that can affect safety and vibrancy.

Pedestrian environments are generally poor in the town. Focusing improvements in areas that have high pedestrian movement are key. These are predominantly in the town centre, however, additional routes are shown in the map above to also be those streets with high pedestrian movement. The type of improvement made to all of these areas include extending planting as buffers to pedestrian paths, new cycling paths, and maintenance of pathways. In addition, those highlighted that are also close to school and kindergarten facilities could include safe crossings, traffic lights, raised pedestrian paving, and bicycle parking station.

Extending the bus route would greatly impact connectivity, access to livelihoods and to facilities for neighbourhoods further from the town centre - predominantly those with high population numbers, such as Jany Jer. In addition, pedestrian and road permeability could be increased in Neftebaza, to better connect these peripheral areas. Replacing the bus network is not considered a priority over accessibility of the current population, however increased frequency or consistency through all seasons

may be considered and renovations of the main station could benefit this.

Engaging with regional traffic on the Torugart Pass is an economic opportunity and may also assist in diversifying secondary economic nodes, and improve pedestrian connectivity through design interventions across this road. Finally, areas of high pedestrian mobility flows, as well as high congestion, such as in Bazar, could be considered to pilot pedestrianisation at certain times of day. This can enhance economic activity, provide a more vibrant area, reduce congestion in the town centre (whilst allowing for service vehicles and delivery vehicles at specific hours).



## Road Network Analysis Approach & Outcomes

### i. Density of Road Network

The density analysis of the road edges (which refers to the total length of the street) aims to identify the distribution of road provision, as this variable has a direct influence on how walkable the study area is. However, it is not the only determining factor for how walkable an area is. For example, a high provision of roads may reflect one central axis. This may show a high number (in km) of road surface however, it is necessary to also consider the density of intersections and the number of circuits formed between intersections and straight roads. This provides an indication and assessment of the permeability of the road network and how walkable the area is. It highlights not only the quantity of the road network provided, but also how many options pedestrians can choose between along the network.

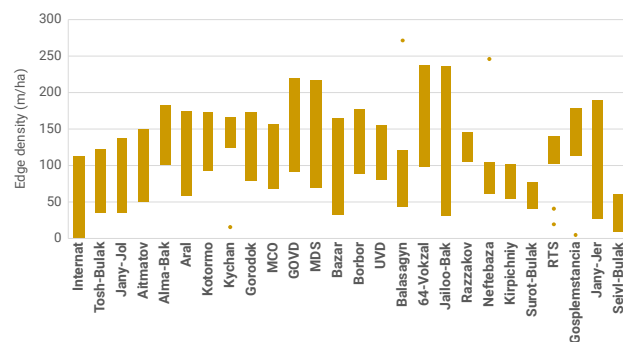
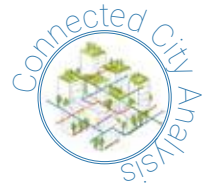
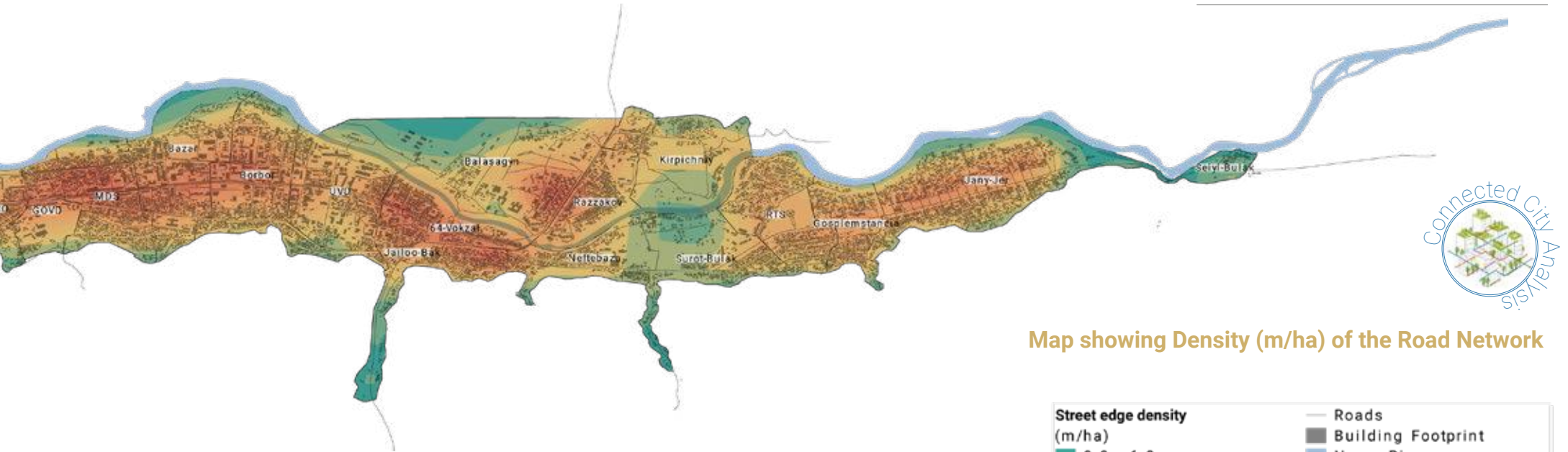


Figure 50. Average density of road network (m/ha) within each sub-district (showing the amount of road network in comparison to the size of the sub-district)

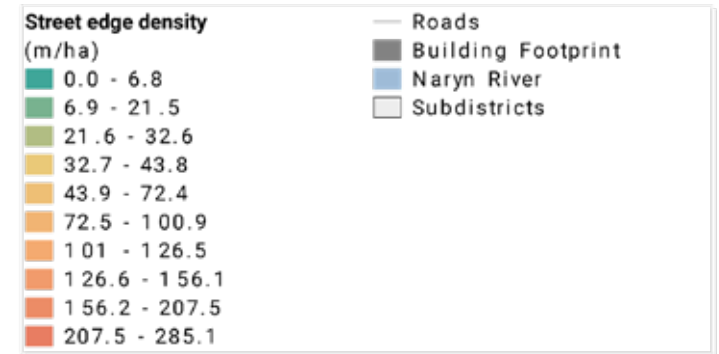
Considering the total length of road network per sub-district, Internat and Tosh-Bulak, and the Eastern side, Jany Jer, show the highest provision (the extent of roads in these 3 sub-districts represents 24.5 percent of the total), however, when considering the size of the district, it is important to note that these sub-districts are also the largest ones.

Therefore, the map above is helpful in representing the density of the road network (to account for the size of the sub-district in relation to the provision of road network). Using this evidence, we can see how on average, the town centre has a slightly higher road density. 64-Vozkal, for example, has a low road network provision, but a high road network density. We can also see that Jany-Jer has a relatively high road network density though is disconnected from the town centre by a low provision and density area. This may indicate less consolidated road network, or a 'less developed' area that divides the town centre from this neighbourhood in the East.

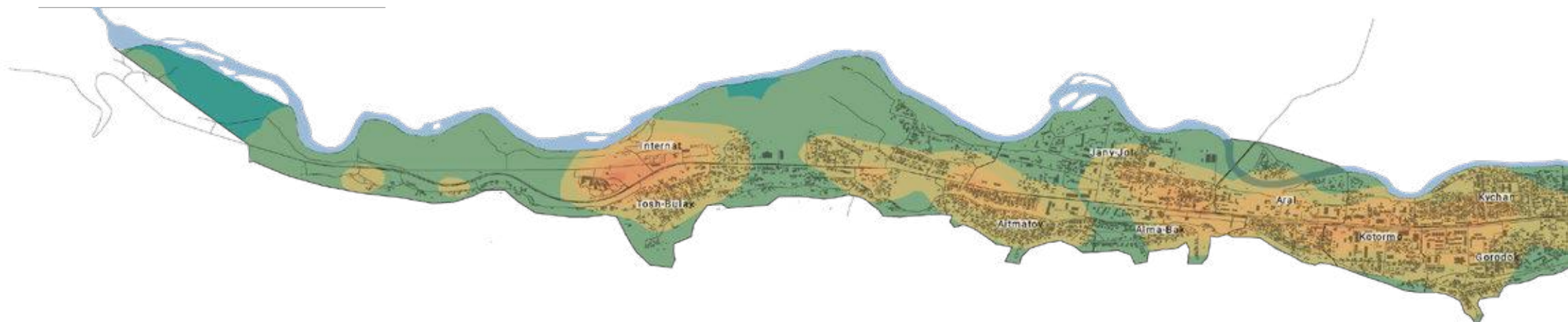
It is interesting to note sub-districts which have 'outliers', representing smaller areas within the sub-district with a much higher density of roads. This is present in Razakov, Neftebaza and Balasagyn and may be reflective of newer residential units constructed at the same time, and simultaneously as the construction of the road network around them. The map and supporting graph show that the areas with the highest levels of road density per hectare, are predominantly along the main road axis.



Map showing Density (m/ha) of the Road Network



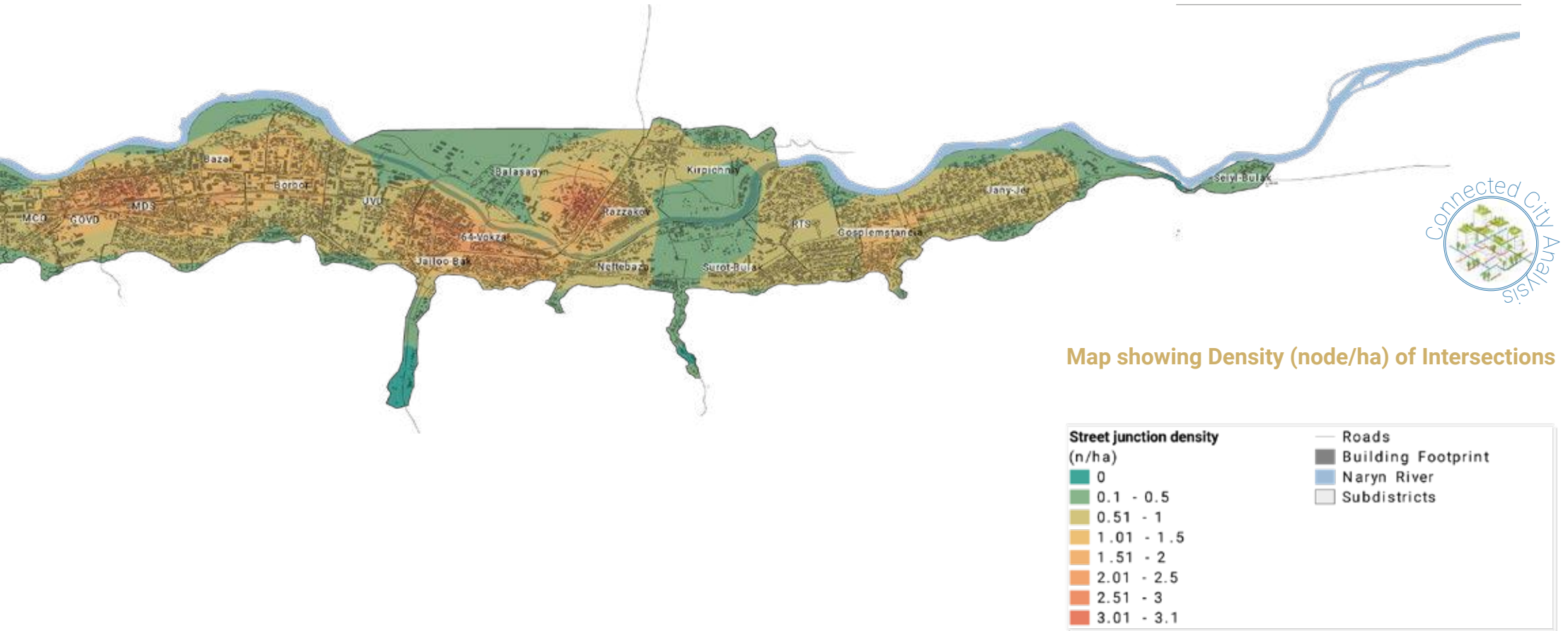




## ii. Density of Road Nodes/Intersections

Node density highlights the density of road 'nodes' or intersections. It is useful to compare between this and the previous analysis. Although additional analyses are needed to identify areas for the implementation of additional road sections, 'closing the loop' in areas that have a low road intersection density may be an efficient way to improve permeability. This is particularly the case in areas which have a high road network density but low intersection density – after comparing the two analyses, this is evident in areas such as the town centre, where there is a higher level of pedestrian activity. This is also reflected in Jany-Jer, which has a number of parallel streets but limited intersecting streets.

Node density is also an important indicator in terms of transportation network resilience, as more nodes provide alternative routes for evacuation or in any case of network disturbance.

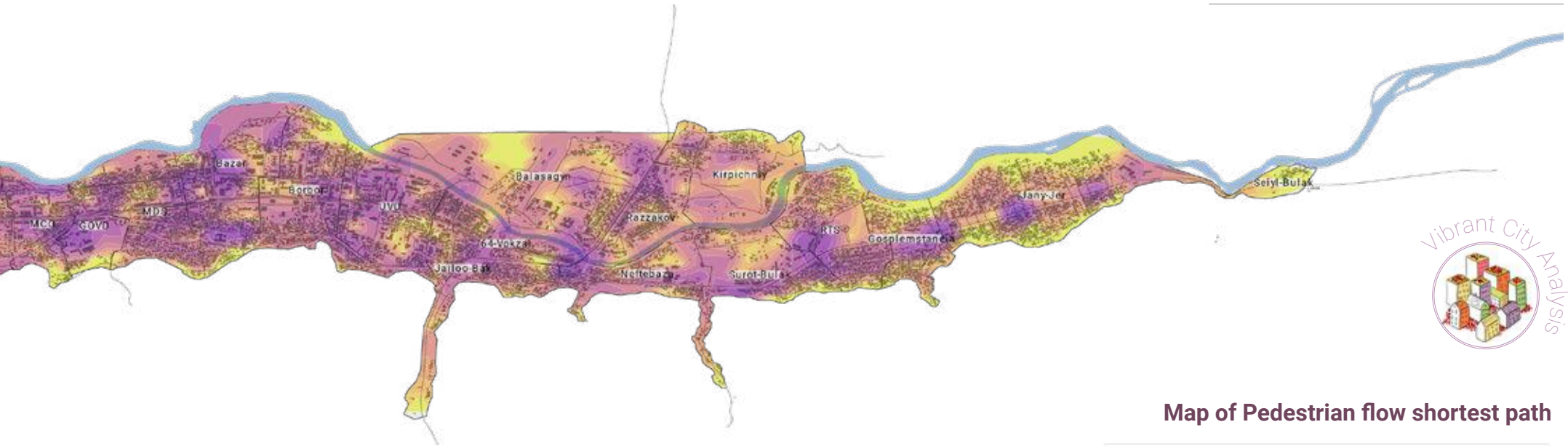


Map showing Density (node/ha) of Intersections

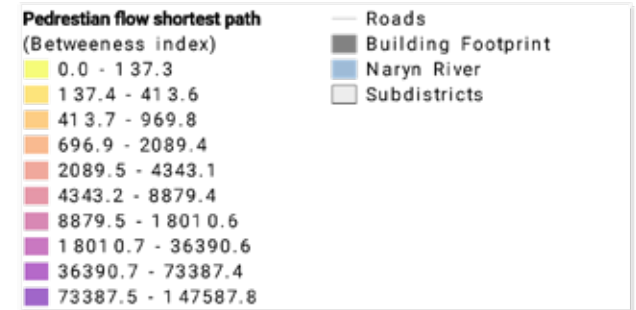


### iii. Mobility Flow - Shortest Path

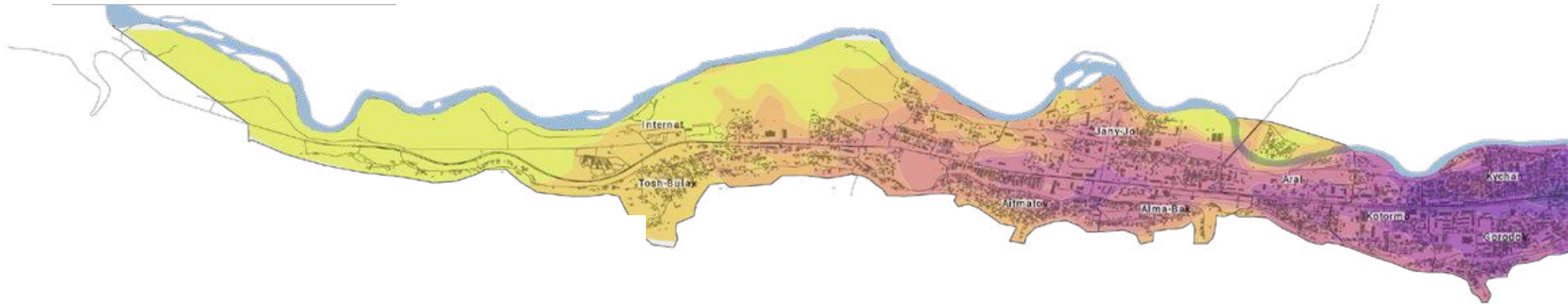
Betweenness Index highlights the roads most likely to have the highest density of pedestrian movement. The analysis provides evidence for the most efficient routes between all residential units. This can help to indicate areas for increased footfall as an incentive for economic activities, as it estimates the potential of passers-by in different areas of the town. It also indicates those roads or paths that may require additional interventions for pedestrian traffic, such as formalized paving or tree planting. In addition, when planning for high levels of pedestrian traffic around the marketplace, or schools and kindergartens at certain times of day, these roads may be considered for vehicular traffic calming measures, such as gates or bollards for pedestrian-only access at certain times of day.



Map of Pedestrian flow shortest path







#### iv. Mobility Flow - Straightest Path

Straightness Index below highlights the straightest path between all residential units. Although the previous analysis shows the most efficient route, many pedestrians choose the route which appears to direct them to their destination. This can sometimes be a longer distance but indicates a preference of paths with less changes in direction. Thus, the "straightest path" analysis is included in order to consider those paths highlighted here as having a higher density of pedestrian movement. The map highlights areas that have the potential to receive a large number of foot traffic (assuming the population walks an average of 15 minutes and uses the shortest routes). The highest density of pedestrian movement in this analysis can be seen in sub-districts that stretch from the town to Kotormo. There is also a smaller area of high pedestrian density in 64-Vokzal.

When comparing these two analyses, MCO, Bazar, UVD, GOVD, and Bazar are seen as the ones that receive the greatest affluence and score highly in both instances. These areas could be considered for the implementation of additional pedestrian routes, the prioritisation of

improved pedestrian infrastructure (such as maintained pedestrian pathways, hedges separating pedestrian from vehicular traffic flows, benches, tree planting and others).

In addition, this graph highlights the areas of the town that are both the 'straightest' path chosen by residents in Naryn, but also those that have a high diversity of land uses.

Figure 55 comparing the straightness value with the land use diversity index shows a group of sub-districts that, despite receiving a large influx, do not offer values of diversity of activities. These sub-districts are: MDS, GOVD, Kychan, MCO and Gorodok. In this sense, these sub-districts have the potential to increase and maintain a higher degree of economic activities associated with commerce and diversification from residential to mixed land use due to the estimated pedestrian flow.

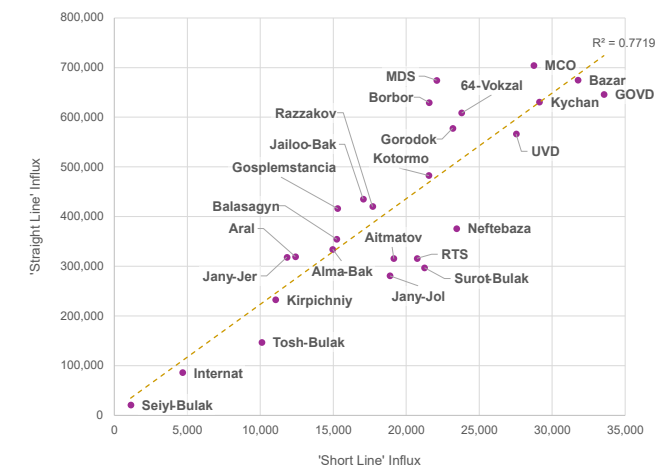
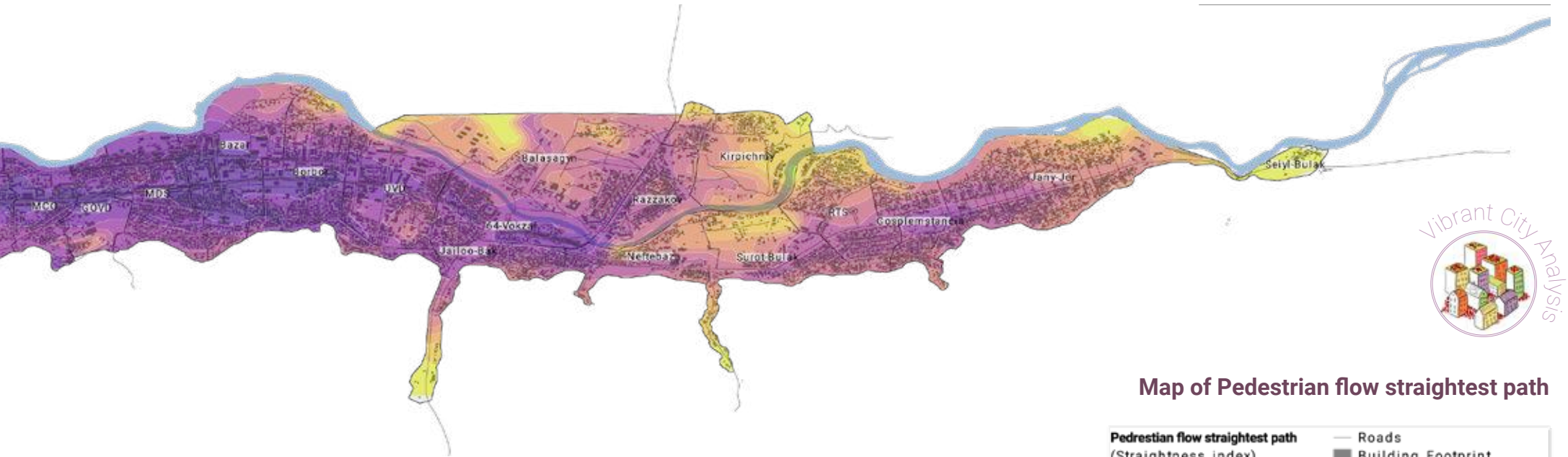


Figure 51. Straightest path between residential units



## Map of Pedestrian flow straightest path

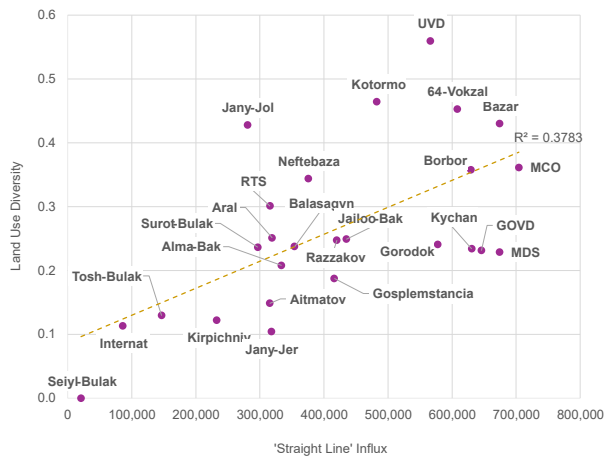
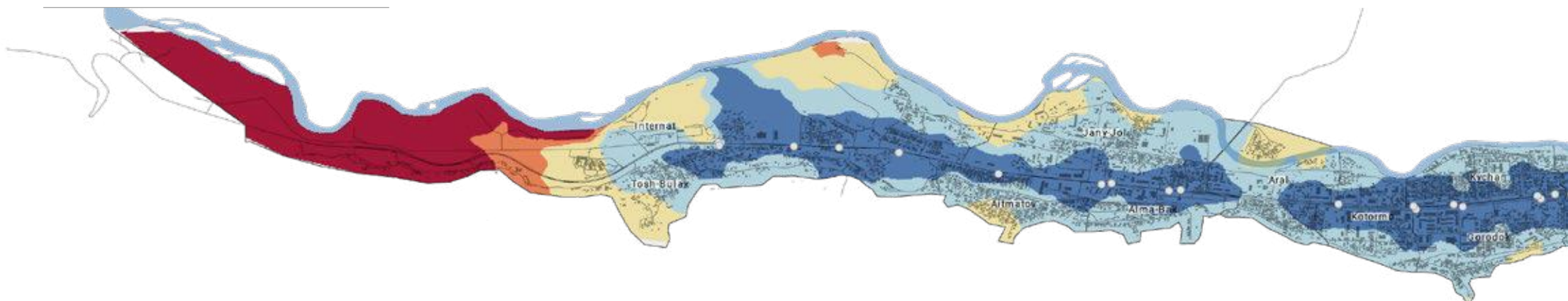


Figure 52. Straightest path chosen by residents against high diversity of land use



#### iv. Access to Bus Stops

The analysis indicates the areas of the town that are within a 5, 10, 15 and 20+ minute walking distance from the current bus stops.<sup>5</sup> This map highlights the gap in the bus service distribution over the extent of the town, showing that residents on the East and West areas of the town, for example the relatively large population in Jany-Jer, are lacking 'last-mile' connectivity.

The graph supports this and highlights the sub-districts Seyl-Bulak, Jany-Jer, Gosplemstancia, RTS, Surot-Bulak, and Kirpichniy with none, or a few percent of their population that have access to a public transport stop within 20 minutes' walk. The bus line is efficiently located along the main road, as it services a high proportion of the population in the remaining sub-districts (people can access in mainly 5 and 10 minutes' walk). Those sub-districts with a higher accessibility to the public transport network are also those that are most densely populated. This highlights the efficiency of the transportation system.

However, it also highlights how extending the bus line along the central route will proportionally benefit a large proportion of the remaining population.

This is supported further when considering the number of people within each sub-district. Extending the bus line to sub-districts on the Eastern side, for example in Jany Jer, would benefit a high number of people.

The main bus station, built in 1969, is in need of an upgrade that must be informed by a proper assessment of its conditions and capacities. The bus runs frequently, however does not run during school holidays, making it an inconsistent and unreliable service.

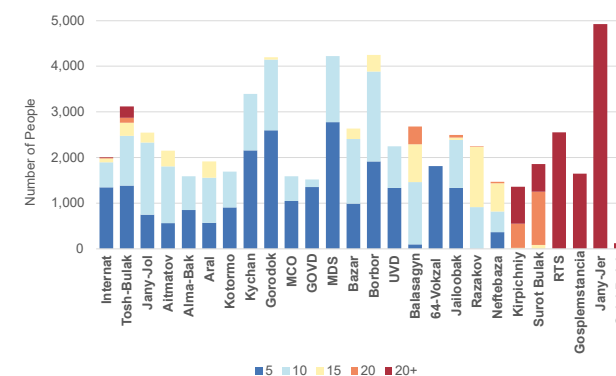
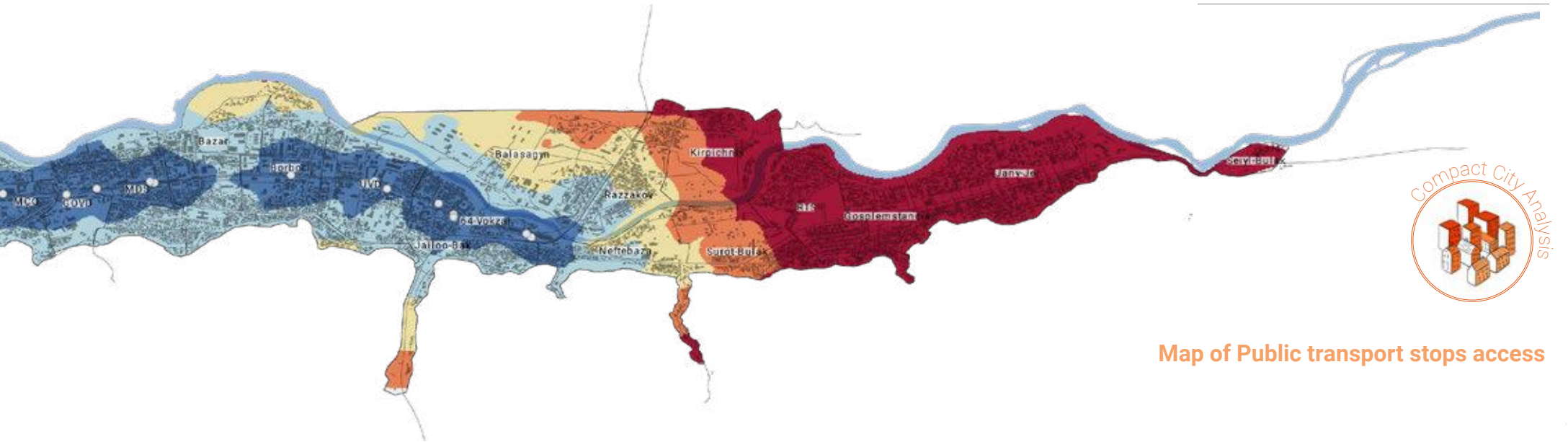
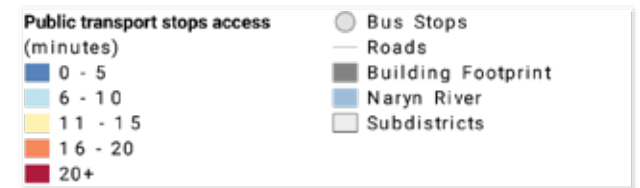


Figure 53. The number of people per sub district that can access a bus stop in 5, 10, 15 and 20+ minutes

<sup>5</sup> This analysis uses the Closest Facility network analysis tool.



Map of Public transport stops access





## Impacts of Urban Form & Provision of Services

The impacts of Naryn's undiversified land uses and inefficient road and street networks correlates to an urban environment of unequally distributed services and facilities. Key services are distributed unequally across the city, and their proximities to residential populations are not always effective for the number of people they serve. In some instances, communities need to travel outside of walking distances, without sufficient road and street networks to access key services such as public and green open spaces, education or health facilities. In other areas, the location and capacity of the service or facility does not respond to its surrounding low population density service area, making them underutilised and less effective. This not only stagnates the sustainable growth of Naryn, but also creates challenges around inclusiveness and compactness.

The linear layout of Naryn further complicates the issue, with a concentration of infrastructure networks and provision found in the central districts of the city, leaving the outlying areas to the West and East unserved and exposed to increased vulnerabilities in this regard. As the city grows, provision of essential services such as water, sewage, and electricity emerges as a challenge that could have large financial, social and environmental implications if it is not effectively planned for. This planning needs to take into consideration the population densities, as well as the topographical conditions, so that interventions are sustainable and resilient.

The analyses made around infrastructure network provision and proximities also reveal an increased exposure of the city to human-induced environmental degradation. The use of fossil-fueled brown coal, the lack of maintenance of pipes or non-provision of solid waste and sewage systems all have significant impact on the environment and natural resources. These highlight a potentially concerning breakdown of environmental resilience which increases the city's risk profile and

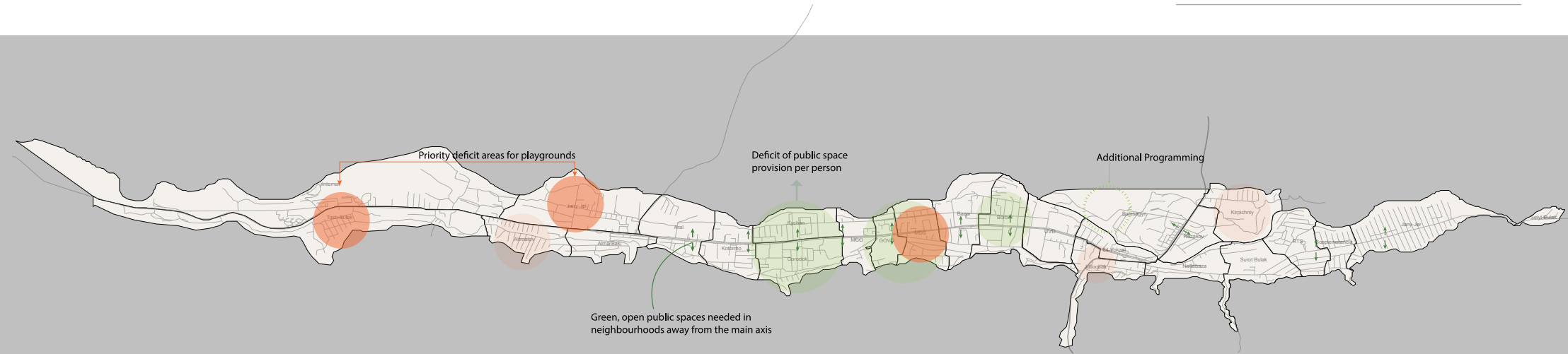
vulnerability to natural hazards, and impacts the health and well-being of its people.

## Key Findings

### i. Public Space

In Naryn, there are a diversity of open and green public spaces in the city - these spaces are usually fenced around their perimeters and designed with landscaping and some seating furniture. There are around 4.5 square metres of public open green space per capita in Naryn,. However, this is not evenly distributed across the city, but is concentrated in Alma Bak, RTS and Balasagyn.

Although these large green areas contribute to reducing the city's air pollution, as well as hazard protective measures, they are not conveniently accessible to all, nor well used. The park in Balasagyn has a relatively low population density in relation to the area of green space provided. Also considering the land uses, and position of the park toward the outskirts of the city, additional



programming and activities are required to improve usage of this green resource.

Additional smaller, green, open public spaces are found predominantly along the central axis of the city. The population would benefit from smaller pocket parks or playgrounds within neighbourhoods North and South of the Lenin Road. In particular in MDS, Gorodok, Kychan, GOVD and Borbor, which present the lowest green area per person.

Rather than creating additional green spaces (to increase green coverage), existing informal landscaped areas could be improved (such as planting alongside the river). In addition, street planting (trees and bushes) could be extended from the central road into residential areas.

Additional playgrounds in Tosh Bulak, Jany Jol and MDS would benefit the highest number of children in Naryn. As a secondary priority, new playgrounds in Aitmatov, Jailoobak and Kipichniy would be beneficial.

UN-Habitat's Global Public Space Programme suggests 15 - 20% of a city's land area be reserved for open public space - Naryn has an average of 13.3% allocated for open public space within the built-up area of the city which suggests a balanced ratio.

While green spaces (parks) provision is a priority for the city, their sustainable management and maintenance must also be considered. Only 20 percent of current green spaces are watered by the BNC, while the rest are watered by irrigation canals. More connection from BNC can enhance the potential of nature-based solutions and sustainable management practices.

Additional to consider when assessing green spaces in Naryn is its location adjacent to a wide pastureland and forest area to the South. There has been a gradual loss of forest cover due to informal use of forest wood for fuel. This not only contributes to a loss in green space provision, but has multi-fold negative consequences for the city, including the increased risk of hazards affecting populations where mud- and debris flow occurs, a higher

impact of high-velocity winds and the spread of solid waste, reduced filtering and protection of water sources and natural springs, reduction in air quality and quality of soil, and less protection of river and canal embankments from erosion.

## ii. Education

Naryn city serves as the administrative, cultural, scientific, educational, and business centre of the oblast. The city has eleven schools, eleven kindergartens, two universities and four institutes of professional education. These facilities vary in size and capacity, quality of the building and service area, and accessibility.

There are eleven schools in total. These include specialized schools – a music and sports school – as

well as private and public schools. Secondary Schools show a deficit (where people have to travel more than 20 minutes) in Jany-Jol, Alma Bak, and partially in Surot Bulak, Aral, Aitmatov, Tosh Bulak and Kirpichniy.

In terms of capacity, the secondary school in Tosh Bulak and in Gosplemstancia have the worst ratio between the occupancy of the facility, and the number of children who would access that facility. In addition, these are the two secondary schools that have the worst building quality. These may be considered a priority for expansion and renovation.

20687 people cannot access a kindergarten within a 10 minutes' walk from their home and 9016 people cannot access a kindergarten within less than 20 minutes. This is particularly noticeable in Jany-Jol and Alma Bak, and also in Aral, Tosh Bulak and Surot Bulak.

Kindergartens serving population in MDS and GOVD, Tosh Bulak/Internat, and RTS/Gosplemancia have

the worst ratio between kids and facilities, and overall, kindergartens have a worse ratio of demand and capacity than schools, indicating this as a bigger deficit in education facilities for Naryn.

A number of professional education centres are located in the city centre. The Naryn State University is well integrated into the city, whereas the University of Central Asia (UCA) facility is segregated from the city in many ways. Improved social and physical integration would greatly benefit the population and can be manifested in physical and non-physical ways - for example extending the bus service between the city centre and the UCA campus, increasing public programming in the university campus.

### iii. Health

There are currently five polyclinics in the city, which function for regular visits for patients who are then referred to the regional hospital if additional intervention

is required. Clinic 5 is currently non-functional. There are specialised hospitals such as maternity care and AIDS clinic. When assessed spatially, the location of the health facilities appear to service the extent of the city. However, qualitative data reveals that the condition of the facilities are not suitably capacitated to deliver healthcare services at an optimum level, and evidence in the following chapter shows high demand compared to capacity. During consultations with stakeholders and the city health department, tuberculosis (TB), respiratory and heart related illnesses were found to be the most prevalent in the society. This coincides with the loss of function of the only TB clinic in 2017, due to an earthquake. The high usage of fossil fuels in the city highlights how spatial planning is linked to health outcomes (see the following chapter about the use of electricity, coal consumption and health related outcomes).

Tosh Bulak and MDS have the highest number of people that must travel more than 15 minutes to access a

polyclinic. The highest demand in the city (within a 15 minute walk) is on clinic 2, followed by clinic 4 which also has poor building quality. This evidence assists in determining deficits in the city, not only of access but also of demand. The minimum demand within 15 minutes' walk is 3950 people, which is considered high for one health clinic.

#### iv. Water Network

Maps and assessments drawn from the IHA show water systems across the city. However, further consultation with relevant stakeholders reveals a deficit in the way the city receives and manages its potable and irrigation water, and highlights the important role water could play in enhancing the resilience of the city.

Currently, the main drinking water is sourced from a spring in the southernmost parts of the city with a natural filtration system only. Given the topography and layout of the city, water needs to be pumped to reach all

neighbourhoods. The current system is not sufficient for the current demand in terms of pipeline layout (quantity), pipeline conditions (quality), pressure (pumping of water to neighbourhoods located at a higher level). 20 percent of the water pipelines are asbestos (constructed around 1950-1970), the rest are cast iron within the city centre (1970-1980), and the most recent pipelines that have been laid use plastic. Some issues related to the cast iron pipelines are the freezing temperatures causes movement in the soil bed and cracking in the pipelines. Water sources are currently providing sufficient water

for the city and it's residents, however if not maintained, the growth of the city will not be accommodated for. The water irrigation network is often blocked and not maintained which requires not only rehabilitation and reconstruction but also a community engagement and maintenance plan to ensure longerterm maintenance. This also exacerbates flooding, rather than more efficient use of flood water for irrigation.

The main Naryn River feeds the single largest hydropower plant in the Kyrgyz Republic and plays an important role in the country's energy security.<sup>5</sup> However, it is silted, and is polluted by waste and sewage. Due to the high flow rate and quantity of water, this does not pose an immediate challenge. However, it is unsustainable with the city's growth and for the region. It is therefore recommended in the IHA to dredge and clean the river and repair water outlets. Additional measures associated with sewerage will also prevent water table pollution. Currently water management is covered across departments. The responsible department for cleaning the BNC is the Water Department, while the Waste Department take care of cleaning of the embankments.

The IHA also suggests the main water source, Ak Bechel, requires additional protective measures, including tree planting, to reduce damage, improve water cleaning and

---

<sup>5</sup> World Bank, Restoration Opportunities Assessment Methodology Report, 2023



supply.<sup>5</sup> The BNC is another source of water for the city, and is filled with water seasonally, between April and October. However it is not currently being used in the most optimum way. There are 28 connections to the BNC, 14 of which are in operation.

The IHA suggests a rehabilitation of the canal, building of intake facilities, and consequent green areas planned and planted throughout the city to protect these natural resources from waste pollution, collapse or obstruction.

Further to this, forestry plays an important role for Naryn's water systems. With better forest area coverage, snow can melt slower, and fresh water can be collected in springs, providing more drinking water for

#### issue and resolution intervention:

**The improvement of the irrigation network in Naryn will provide a more consistent flow of water that can be used for irrigation, more efficiently using the natural abundance of clean, flowing water in Naryn. It will assist with supporting flooding mitigation through water run-off, which currently is damaging infrastructure without being collected in the irrigation channels for use. Improving (both through extending and maintaining) a network of irrigation channels will also reduce the use of drinking water for irrigation.**

#### v. Sewage Network

The current sewage system is incomplete and under capacitated, with one sewage treatment plant able to service 10,000 people. EBRD are planning to expand the treatment plant to accommodate for 20,000 people,

however, with official statistics showing a population of 41,419 people, and actual population numbers likely to be closer to 60,000, this is currently not reflecting the city's need.

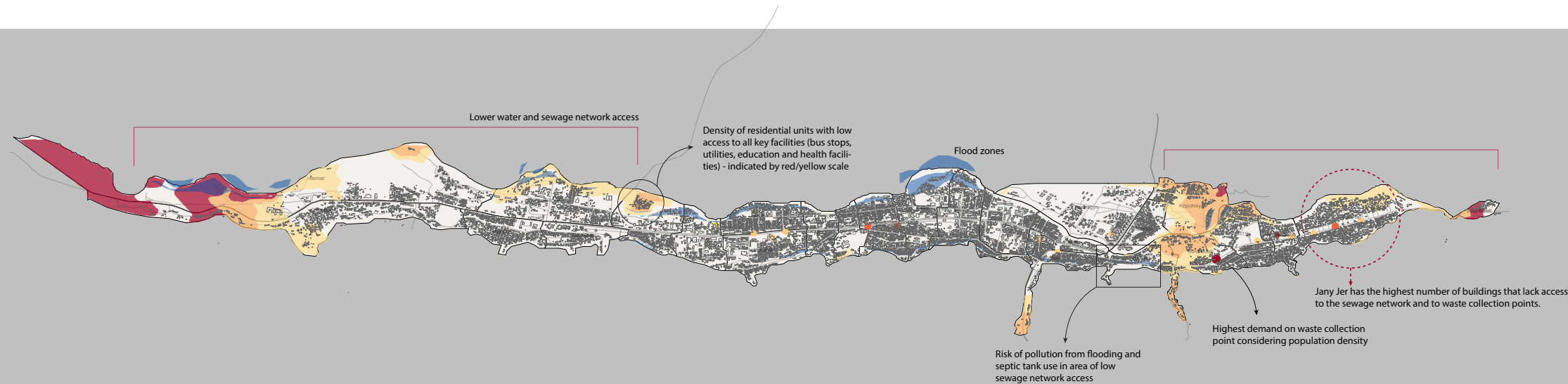
10460 buildings in the city are not connected to the sewerage network, predominantly in Jany Jer. Some areas of higher land in the North of Borbor and Bazaar may require additional pumping.

The consequences of lacking sewerage networks and infrastructure are multi-fold. Poorly treated water flows into the Naryn River and households use septic tanks or run-off pits. This pollutes ground water and the river. Although not causing immediate challenges, with a growing population this will initiate exponential challenges for the city. Flooding areas that overlap with buildings that do not have access to the sewerage network may cause additional spread of sewage.

Additionally, the sewage treatment plant condition is deteriorating and in disrepair, further increasing the

**This analysis includes an example of a multi-fold**

5 IHA



pollution of the river via leaks.<sup>6</sup> The sewage system falls under the maintenance of the City's Water Department.

The highest levels of non-sewage waste come from plastic, construction and glass sources. These are dumped at a landfill, with no separation, either at source or at the landfill, increasing the toxicity of the system. Informal waste pickers conduct some sorting, though not sufficient given the mass of waste that is generated. A waste separation project that was piloted failed due to a lack of awareness amongst communities. A new landfill sit with a waste recycling facility is planned, though it is not clear when this will take place, especially when considering the budget required.

## vi. Waste

The issues with waste collection extend to capacity

issues. While the budget is renewed on a yearly basis, it is still not sufficient to cover the provision of waste containers and trucks. A tax is collected, but irregular or late payments place pressure on the revenue collection, and an insufficient subsidy from the mayoral office further complicates the issue.

The main areas that do not have access to solid waste disposal areas are predominantly in Jany-Jer, as well as in RTS and MDS. In addition, a higher number of waste points in the East of the city appear as having a higher demand compared to those in the West.

## vii. Electricity

The biggest challenge facing the city with regard to energy, is its high reliance on, and main source of brown coal, which is both easily and cost-effectively available from the nearby brown coal mine. The resultant impact of this high use of fossil-based fuels on the quality of air and ultimately, the health and well-being of the people, is severe.

Electricity is provided by Vostokelectro and some liquified gas is used for heating. Electricity is generated at a hydropower plant approximately 60km away from Naryn. Apart from loss through transportation, there is limited storage capability in the city. Meaning that there is an inconsistent electricity supply in Naryn.

Rather than having storage capacity, households within Naryn are encouraged to use brown coal for heating. Pollution from burning of coal is particularly evident during colder temperatures and is exacerbated by 12 large, open coal burning boilers (with a remaining 6 electric boilers) that heat facilities in the city. During winter, the central government limits the use of electricity in Naryn.

6 IHA



## Public & Green Open Space Analysis Approach & Outcomes

### i. Public Open Green Space Provision

The following analyses uses all public and green open spaces in the town, but does not include, for example, the Botanical Garden, which is closed to the public. The analysis is based on the current land use map from the masterplan (approved in 2023), spatial data sets shared by AKAH, and satellite imagery.

There is a total of approximately 4.5 square metres of public open green space per capita in Naryn, (taking into account official green areas, rather than tree planting along the road, or agricultural land etc), and 4.9 square metres of open public space (including parks that are not landscaped) per capita.

In order to not only understand the provision of public space, but also the distribution of public space across the town, the map highlights that a large amount (35.9

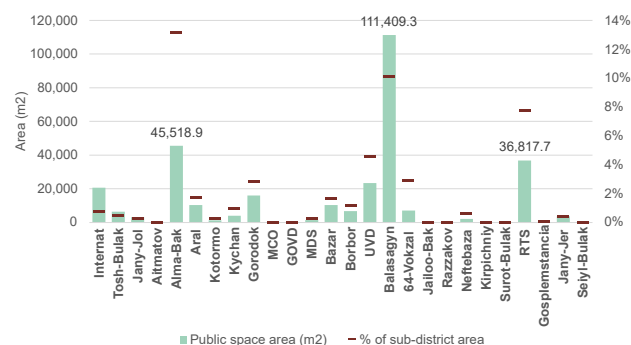


Figure 55. Graph highlighting the 'imbalance' in public space provision in Naryn

percent) of the total public space area provided in the city is located within Balasagyn. Other sub-districts concentrating a significant percentage of the public space area provided are Alma-Bak (14.7 percent) and RTS (11.9 percent). These 3 sub-districts concentrate the 62.5 percent of the total area of public space provided in the town. This highlights an 'imbalance' in public space provision in the town. This may suggest

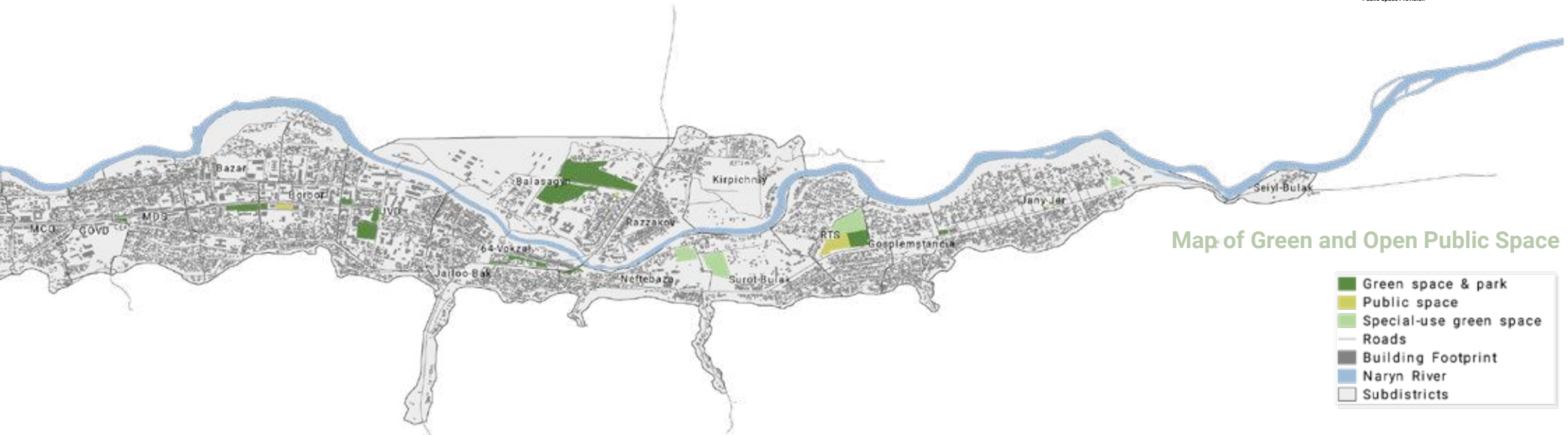
that additional public spaces may be required in the sub-districts Aitmatov, Kotormo, MCO, GOVD and MDS, and East of 64-Vokzal (apart from RTS). However, this must be supplemented by the following analyses for conclusions to be drawn.

### ii. Access to m² of Public Open Space

Data that includes the population density of the town can enable us to provide evidence to show the provision of public space, based on where people live in the town to better understand how efficiently located the public space is. When considering this, 9911 people (15.91 per cent of the total population), are able to access 9m² or more, of public space within 15 minutes' walk.

Figure 59 highlights the proportion of the population within each sub-district that has 9m² or more within 15 minutes' walk. It highlights that these people are predominantly in Aral (79.2 percent), Balasagyn (100 percent) and Razakov (100 percent).

An element that was not included in this analysis is the



Map of Green and Open Public Space

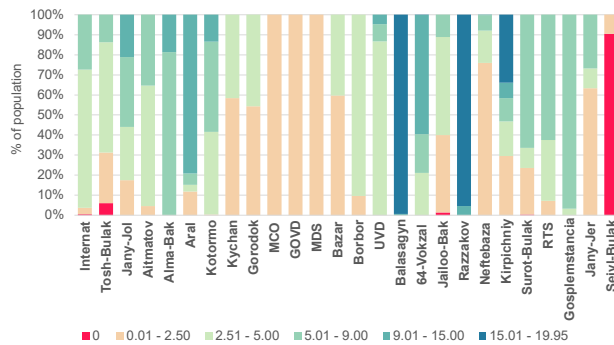


Figure 56. The % of people within each sub district that can access 0-15+ m² of public space

presence of landscaping along the road network. There are hedges and trees along the main axis, Lenin Road, which enhances the green network and provides a safety buffer for pedestrian movement. However, both green public spaces, and road landscaping are not as present within the neighbourhoods north and south of this primary road. In addition, not considered within the analysis are several non-official green spaces existing in

the town, for example along the riverside.

From this first analysis, we can see that additional green spaces would benefit the population, however, considering the size of the town, and the abundance of natural resources that surround it, it may not be necessary to create new public spaces, but invest in small interventions to improve and increase the quality of the natural resources that already exist.

Figure 60 compares population density with public space provision. It highlights that although Balasagyn has a relatively high provision of public space, it is surrounded by a comparatively low population density in that area. It may experience lower usage and may require programming or improved connectivity to promote use of this proportionally large public space. Razakov, on the other hand, appears to have a relatively proportionate amount of public space compared to its population density. Those sub-districts that present a significant population density but lower per capita provision less than 9m² are MDS, Gorodok, Kychan, GOVD and Borbor.

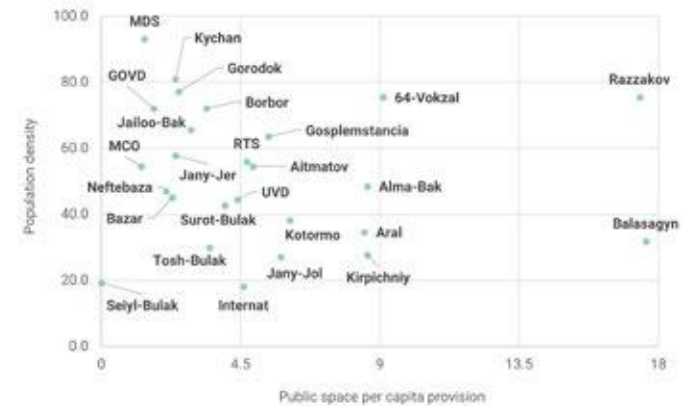


Figure 57. Comparison between population density and public space provision to highlight those areas that do not reflect the population density of the city





### iii. Per cent Share of Public Open Space

UN-Habitat recommends 45 - 50 per cent of urban land be allocated to streets and open public spaces, which includes 30 - 35 per cent for streets and sidewalks and 15 - 20 per cent for open public space. Naryn has an average of 13.3 per cent allocated for open public space within the built-up area of the town.

However, it is important to assess this further to more fully understand the contextual challenges or opportunities related to public space. In Naryn, we can assess the allocation of built-up area and public space that is within a 15 minutes' walking distance for the population, in order to identify how balanced (ratio of built-up space to open space) the immediate environment of the population is. Naryn is aligned with this global benchmark to a certain degree - over 15 per cent of the built-up area allocated to public space when considering the location of the population. This means there is a 'balanced' environment, within a 15 minute walk from 2500 people in Balasagyn and around 2250 in Razakov. Proportionate to the whole population, this suggests that an increase in public space area (m<sup>2</sup>) in relation to areas of the city with a higher population,

would provide an improved 'balance' between built-up areas and public spaces in Naryn. Supporting this analysis so far, it highlights the city centre as having an imbalanced ratio between built-up area and public space.

This analysis provides an indication of how equitable the location of all green and public open spaces are in the city, considering a 5, 10, 15 and 20+ minute walking distance. Walking distance considers both the location of the green space and the road network surrounding it. It allows us to identify any deficit in quantity of green space considering the current population in the city. The density of the population is also considered, to understand how effective the location of green public spaces are in relation to the existing population distribution. Therefore, the analysis considers a 15-minute walking distance, the number of people within that service area, and the area (in m<sup>2</sup>) of green space. This helps to indicate areas that may be overcrowded, or underused. Green and public open spaces include playgrounds, public open spaces that are not landscaped, and green public spaces. This analysis provides a more holistic picture to identify where the deficits are for people to access any type of public space.

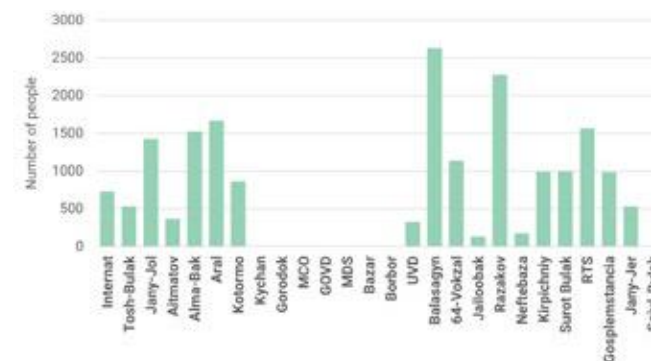
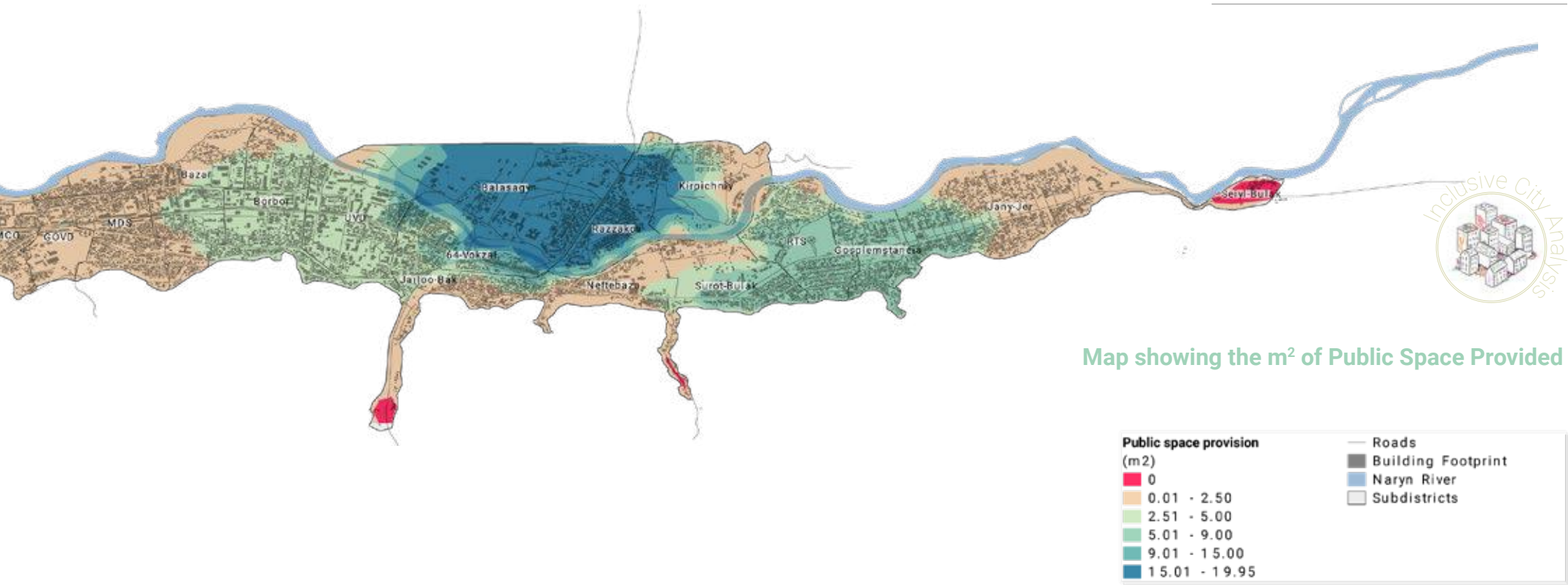
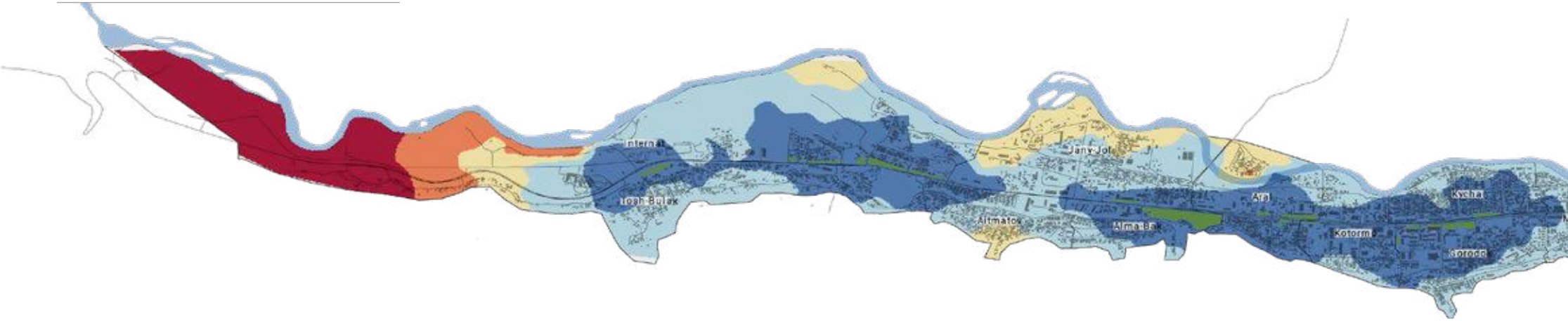


Figure 58. The number of people who live within an environment that has 15% occupied by open public space. This analysis uses a 15 minute walking distance to indicate the area that is assessed to ensure it is reflective of the current population density



Map showing the m<sup>2</sup> of Public Space Provided



iv. Access to any Public Open Space

Although the previous analysis shows limited provision of public space in, for example MDS, this analysis highlights that all of the people within this sub-district are able to access public spaces within 10 minutes. This analysis indicates that additional public spaces, or improved accessibility (new road connections) for the population living in Surot Bulak, Kipichniy, Neftebaza, Aral, Aitmatov, Jany Jol and Tosh Bulak may be useful to consider.

There are 4,515 people who must walk further than 10 minutes too access any open public space, therefore, although small changes to accessibility will improve this indicator for the town, accessibility is not considered a big challenge. This may be due to the size and form of the built environment. Limited on both sides by the landscape, the city can provide relatively quick access for residents when facilities are equitably distributed along the central axis.

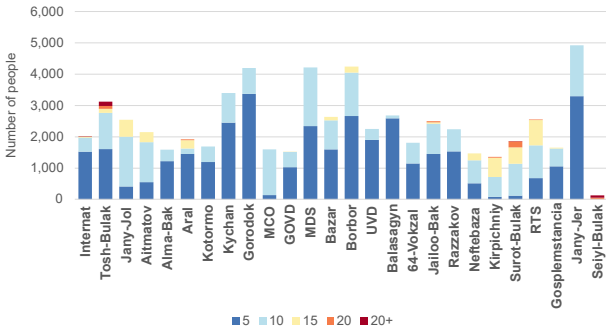
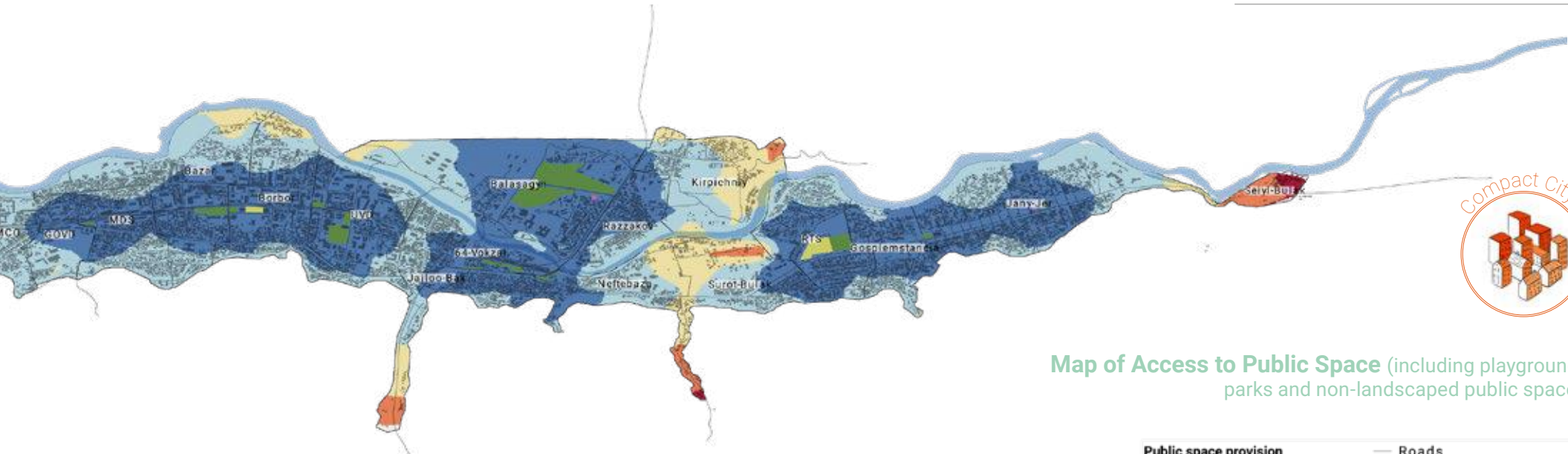
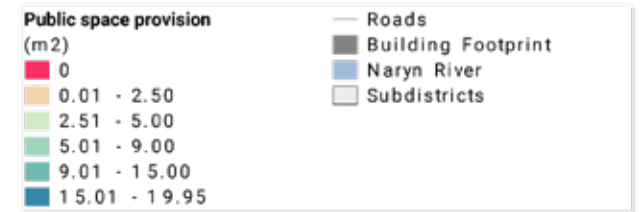


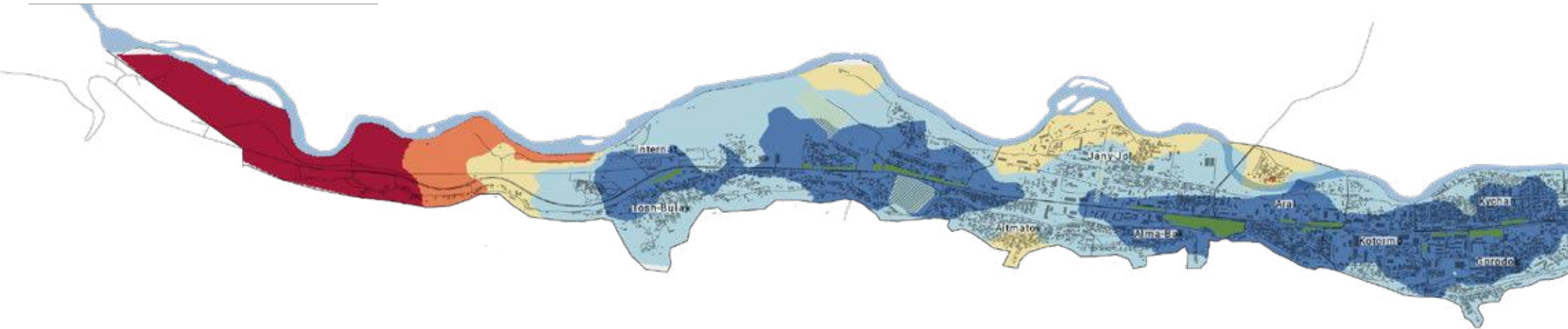
Figure 59. The number of people within each sub-district that can access a green and public open space in 5, 10, 15, 20 and 20+ minute walks



**Map of Access to Public Space** (including playgrounds, parks and non-landscaped public spaces)







v. Access to Green Public Space

As well as public space, this analysis considers the provision of only green, public space (those areas that are landscaped). An analysis of proximity to green public spaces provides an indication of the equitability of the location of green spaces, considering a 5, 10, 15 and 20+ minute walking distance. Walking distance considers both the location of the green space and the road network surrounding it.

Most green, public spaces are located adjacent to the central Lenin Road, apart from one larger park, Jusaiev Park which is East of the town centre. One area that lacks access to green public spaces is Kirprchinyi, RTS, Surot Bulak. This may be associated with not only a lack of green public spaces in this area but also walkable routes across the river in this area. In addition, Selyi Bulak has poor access to any green public space. The total per cent of population with green space provision per capita higher than 9 m2 within a 15 minutes waking distance is 9,256 people, which accounts for 14.9 percent of the population.

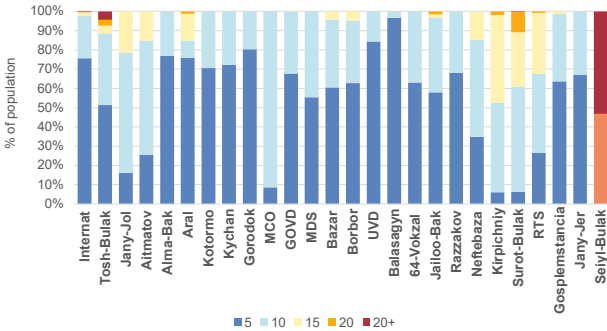


Figure 60. Proportion of the population within 5, 10, 15, 20 and 20+ minutes of a green public space

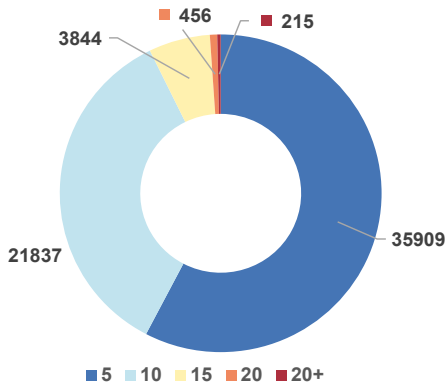
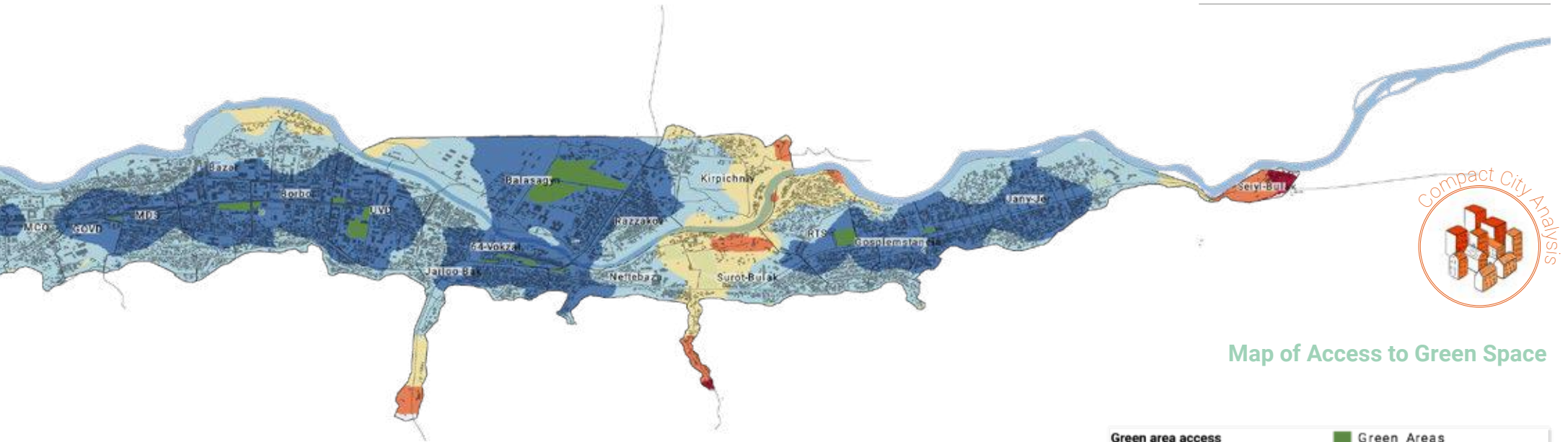
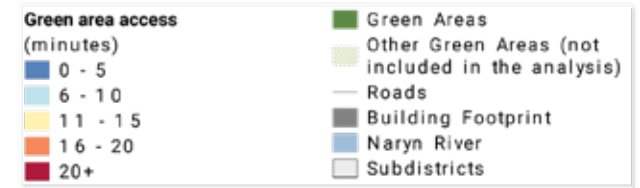
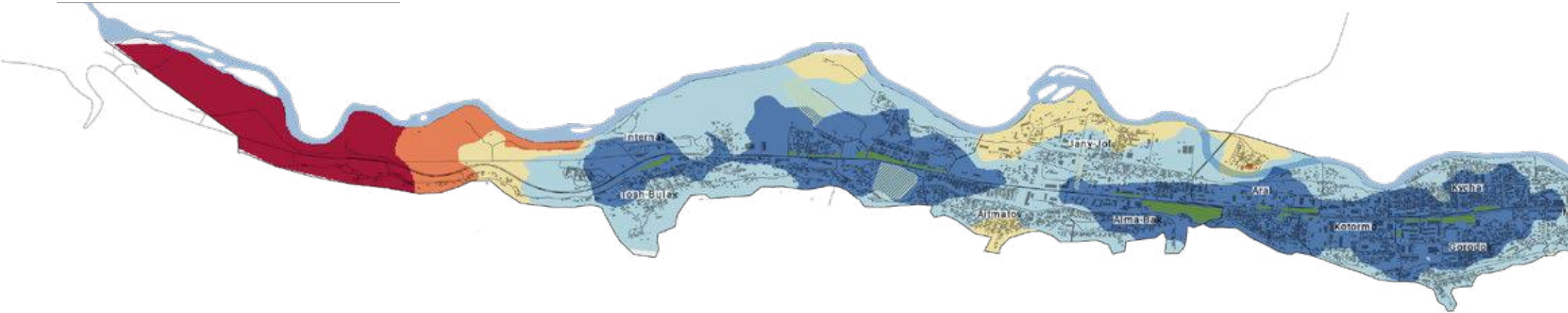


Figure 61. Number of people who can access a green public space in 5, 10, 15, 20 and 20+ minutes



Map of Access to Green Space





vi. Access to Playgrounds

Playgrounds are an important feature of public life to consider separately to other forms of public space due to their function directed at children. These spaces appear to be generally spread across the built-up area of the town, and generally occur adjacent to the central Lenin Road. Additional playgrounds between Jany Jol, Alma-Bak and Aitmatov, MCO, and Vokzal could adjust this deficit for more accessible playground facilities.

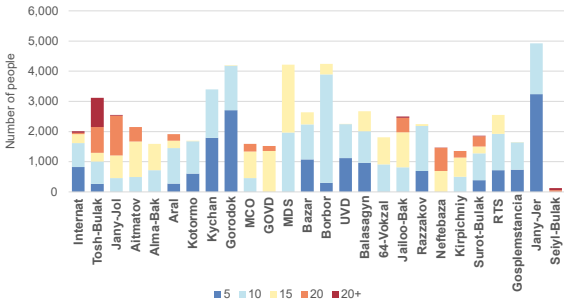


Figure 62. Number of people that can access a playground in 5, 10, 15, 20 and 20+ minutes by sub-district

When looking at accessibility, taking into account the population as well as the location of playgrounds, (Figure 65) it appears that the deficits that are impacting a greater number of people are in Tosh Bulak, Jany-Jol, Jailloobak and Neftebaza. This could be reduced by creating small playgrounds in these areas, or, as could be the case in Kipichnyi, improve accessibility to existing playgrounds.

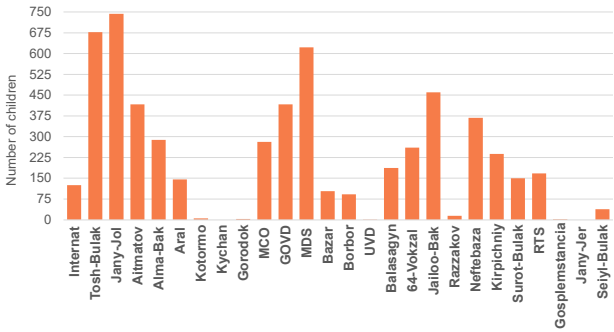
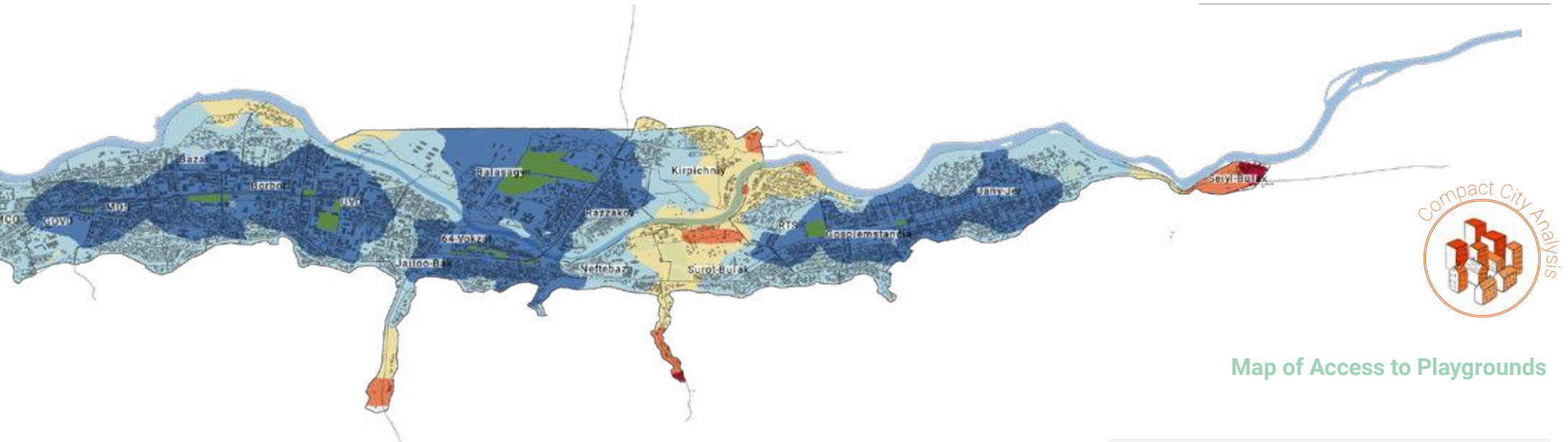


Figure 63. Graph highlighting the number of children that are outside of a 10 minute walk from any playground in Naryn

To further support the above analysis, Figure 66 highlights the number of children who must travel further than 10 minutes to access a playground. When considering accessibility for children, it is important to look at the 5 and 10 minute walking distance to better accommodate safe mobility for children around the town. A total of 5,807 children (10.7 per cent of the total population) do not have access to a playground within a 10 minutes' walk.<sup>5</sup> This highlights the highest numbers of approximately 600 children that experience this deficit in Tosh Bulak, Jany Jol and MDS. This provides a more granular insight into the challenge associated with access to playgrounds for children in Naryn. When compared to the analysis of the whole population, most of the deficit areas align (with deficit areas in Tosh Bulak, Jany-Jol, Aitmatov, Jalalobak and Kipichnyi), however, MDS is highlighted here as a deficit area, as well as Neftebaza and GOVD when particularly assessing children's access within 10 minutes' walk. Tosh Bulak, Jany Jol and MDS are considered to the priority areas for improving access for children to playgrounds in Naryn.

5 The analysis uses disaggregated data taken from the IHA survey which uses the children's age as 0-15 years old.



## Map of Access to Playgrounds

Figure 67 summarises the average access time for each sub-district. Selyi Bulak suffers from a deficit in access to all three types of public space. Tosh Bulak and MDS appear to have poor accessibility to playgrounds.

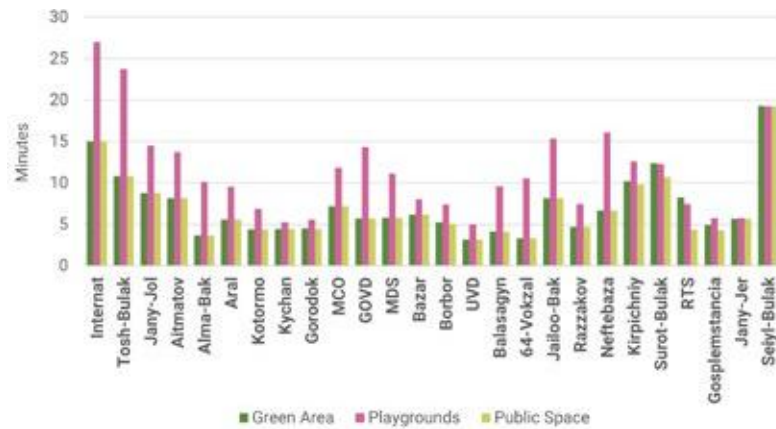
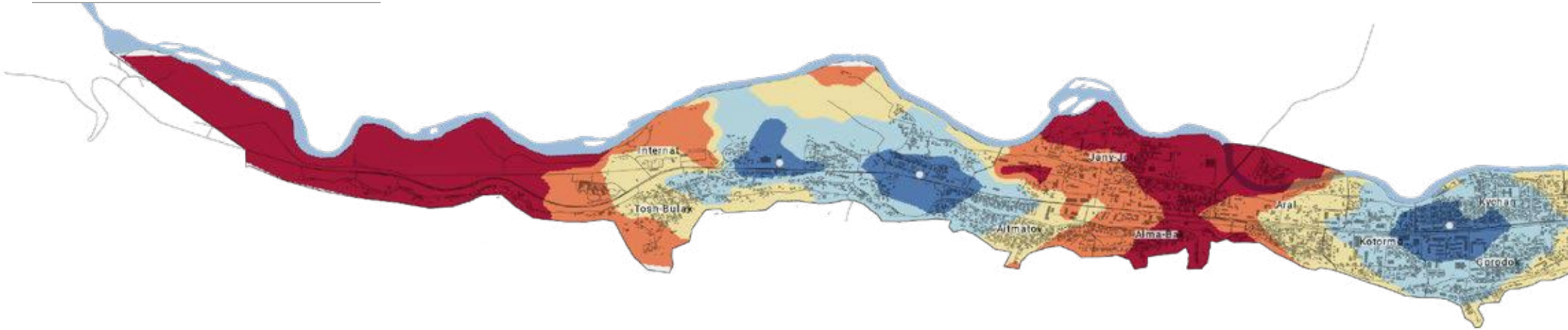


Figure 64. A comparison of the average time it takes to access a green area, playground or public space within each sub district





Education Facilities Analysis  
Approach & Outcomes

i. Access to Kindergartens

11 kindergartens are located across the town, with a conglomeration in the town centre. These are relatively accessible to the communities living in the far East and West of the city, however there are limitations. 20687 people cannot access a kindergarten within a 10 minutes' walk from their home and 9016 people cannot access a kindergarten within less than 20 minutes. This is particularly noticeable in Jany-Jol and Alma Bak, and also in Aral, Tosh Bulak and Surot Bulak.

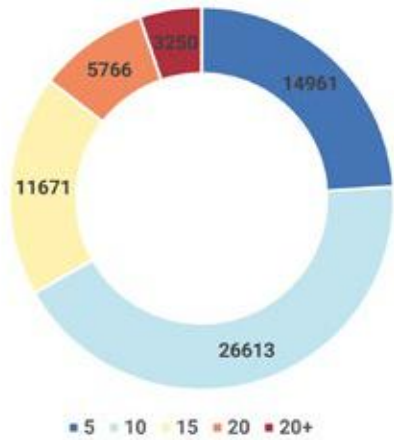


Figure 65. The total number of people accessing a kindergarten in 5, 10, 15, 20 and 20+ minutes

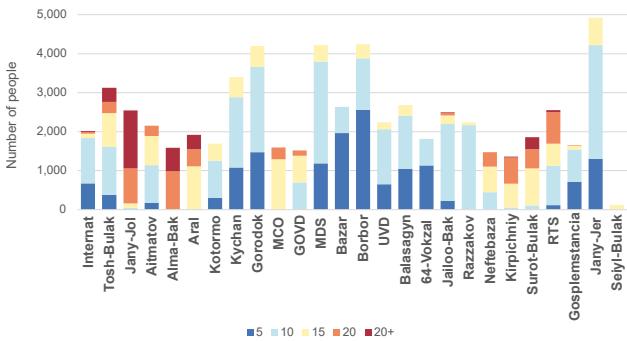
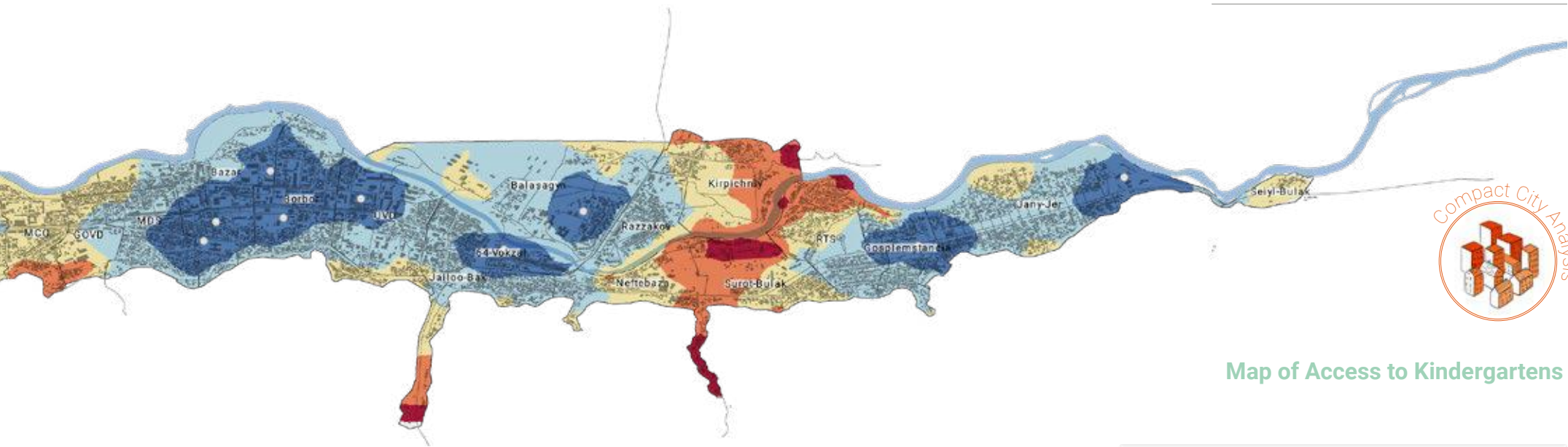
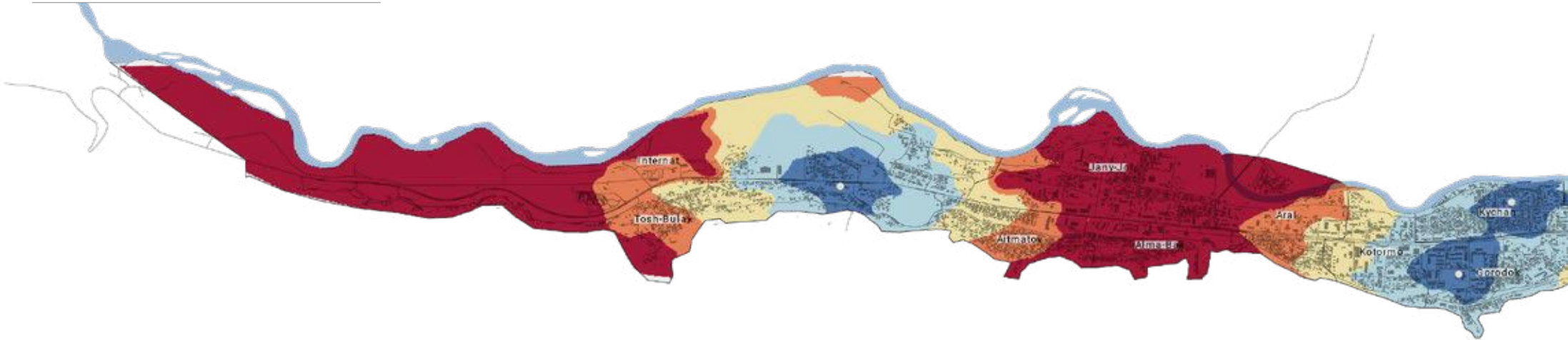


Figure 66. The number of people accessing a kindergarten in 5, 10, 15, 20 and 20+ minutes within each sub-district



Map of Access to Kindergartens





ii. Access to Secondary Schools

There are 11 schools in total. These include specialized schools – a music and sports school – as well as private and public schools. For this analysis, public general schools have been used to provide an understanding of how inclusive the city’s secondary school education is for all. The analysis highlights that although the schools are spread across the length of the city, 32258 people still cannot access a secondary school in a 10 minute walk. Similar to the kindergarten analysis, this shows a deficit (where people have to travel more than 20 minutes) in Jany-Jol, Alma Bak, and partially in Surot Bulak, Aral, Aitmatov, Tosh Bulak and Kirpichniy.

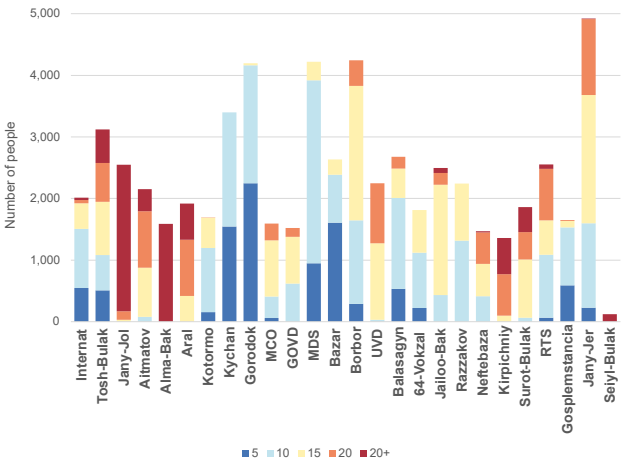
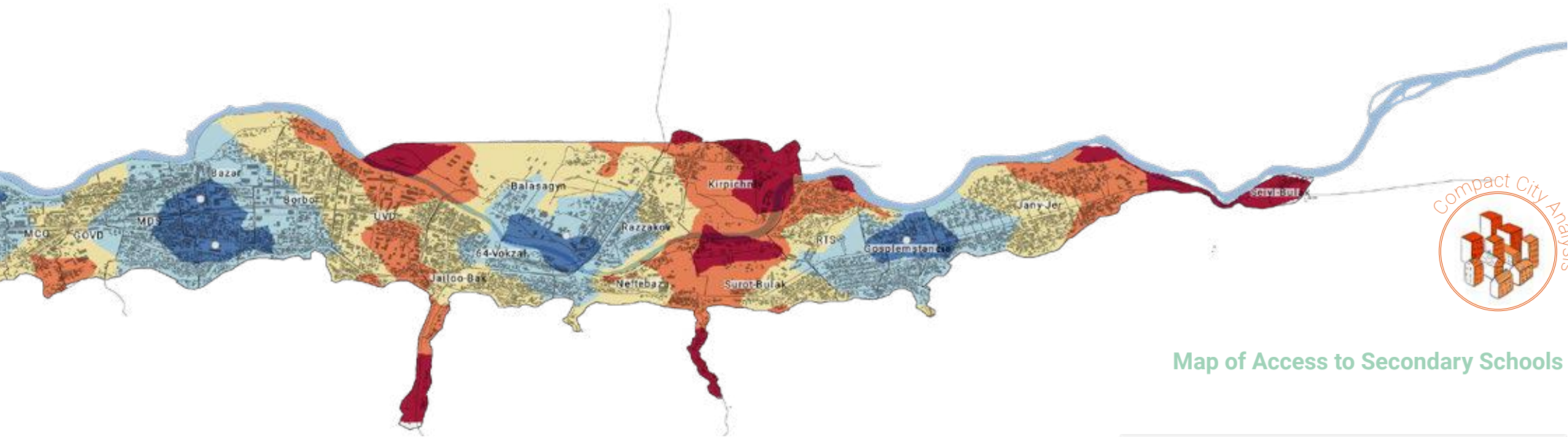


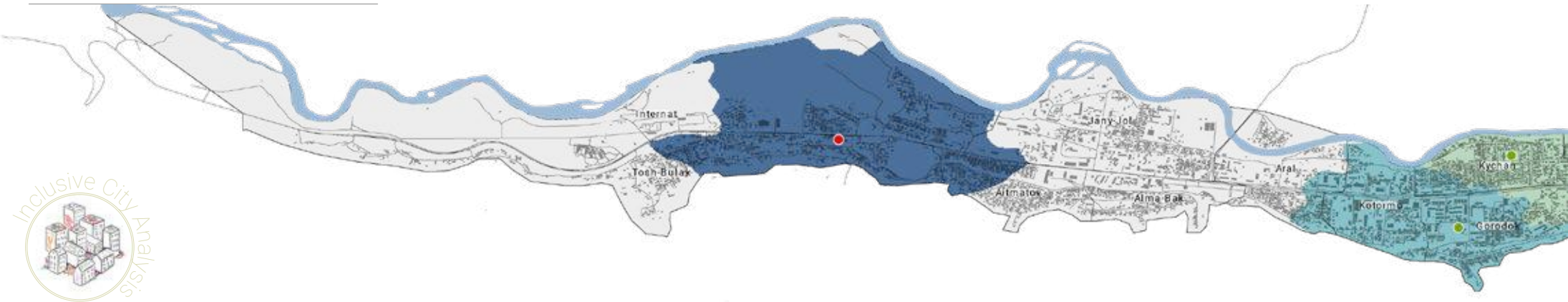
Figure 67. The number of people accessing a school in 5, 10, 15, 20 and 20+ minutes within each sub-district



Map of Access to Secondary Schools







Map of Demand on Secondary Schools

Secondary School capacity within 15 min. access (children per occupancy)	Secondary Schools Condition
1.3	Poor
1.4 - 1.4	Good
1.5 - 2.0	Fair
2.1 - 3.1	Roads
3.2 - 7.4	Building Footprint
	Naryn River
	Subdistricts

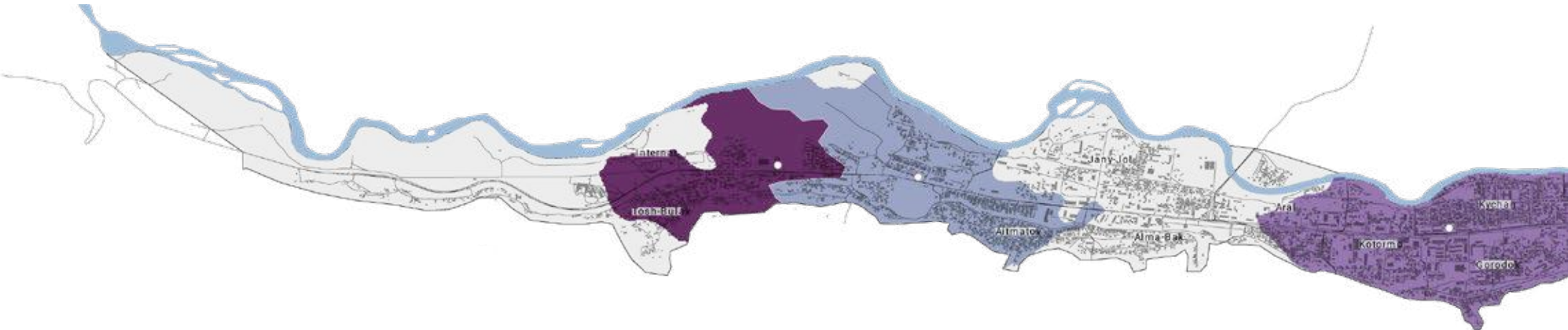
iii. Demand on Secondary Schools

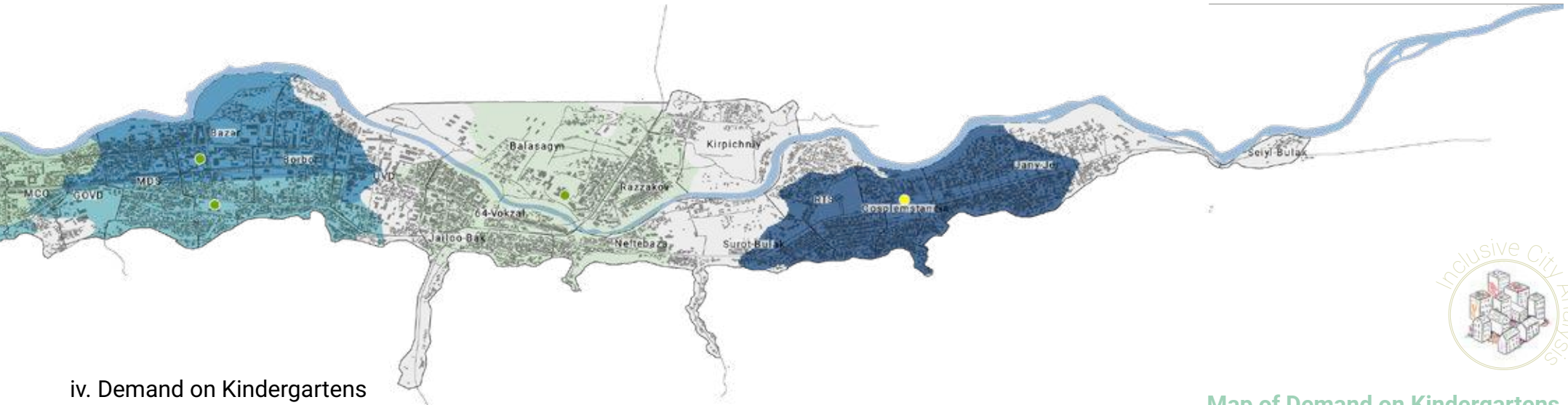
This map highlights the potential demand on each secondary school, as well as the building condition. This analysis helps to show how well the provision of secondary schools accommodates for the existing population, and population density distribution. This means that a 15 minute walk is taken into account, and assumes that each individual would access the closest facility, to see how many people within that 'service area' would use that facility. This analysis also takes into account the occupancy rate for each facility in order to identify the ratio between occupancy and the

population within the service area.<sup>5</sup>

For example, the secondary school in Tosh Bulak and in Gosplemstancia have the worst ratio between the occupancy of the facility, and the number of children who would access that facility. In addition, these are the two secondary schools that are the worst building quality. These may be considered a priority for expansion and renovation.

<sup>5</sup> Occupancy rate is determined through the data sets provided by AKAH through the IHA. These data sets provide an 'occupancy number' for each secondary school.

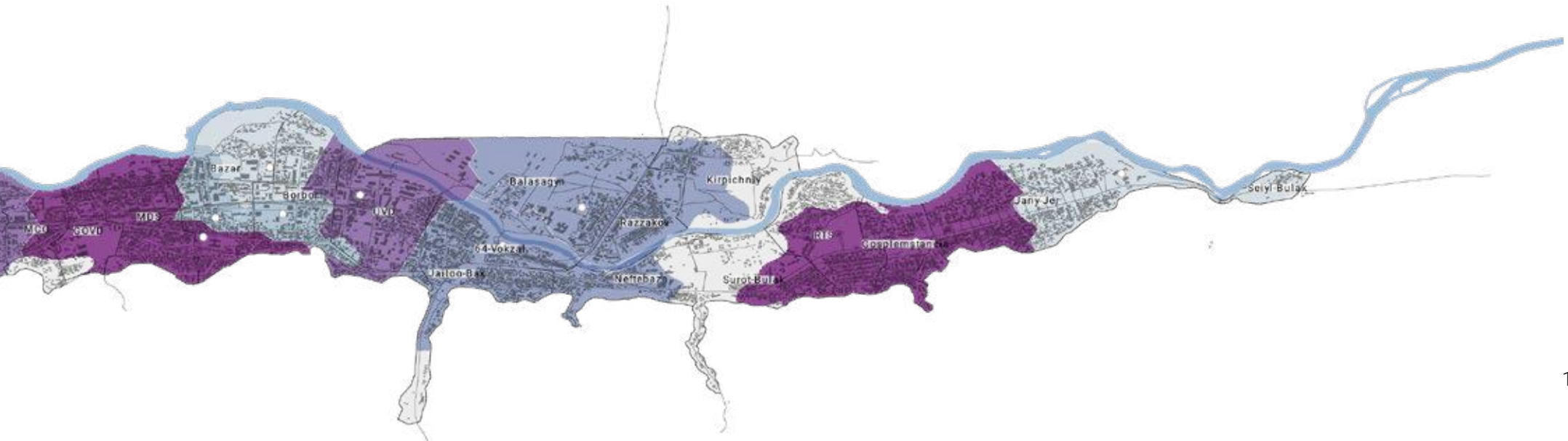
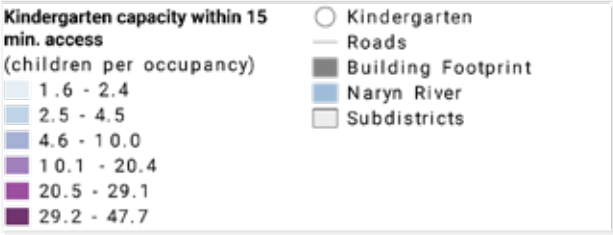




#### iv. Demand on Kindergartens

A similar analysis is shown for kindergartens in the map below. The worst ratio for children per occupancy in schools is 7.4, whereas the worst ratio for kindergartens is 47.7. This highlights a greater discrepancy between the provision and potential demand for kindergartens. Both analyses show a higher demand and lower capacity in the East and West of the city, whereas kindergarten capacity is also lacking in MDS and GOVD.

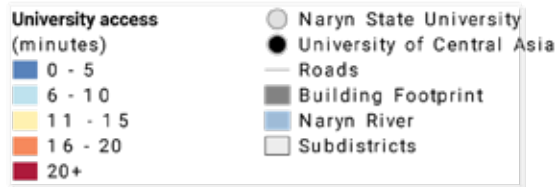
Map of Demand on Kindergartens







## Map of Access to Universities

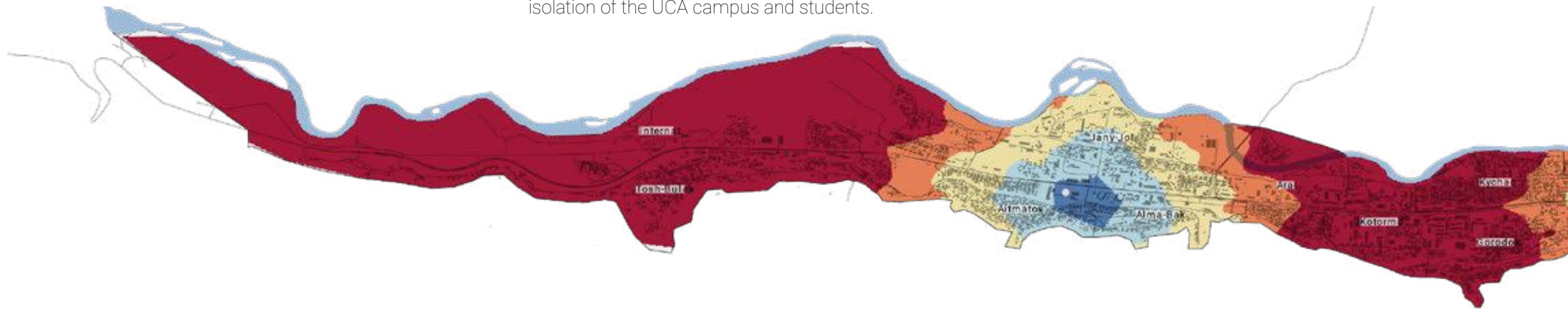


### v. Access to University

Naryn's State University is located within the town centre. The analysis highlights that a large area in the city centre is accessible to the university within a 5, 10 and 15 minute walk. This is partly due to the density of the road network in this area in comparison to University of Central Asia (UCA) which is more isolated from the fabric of the town. 12966 people can access the State University within a 10-minute walk. Whereas UCA is a private university with students that live within the campus, the State University is fully integrated into the town. The city currently experiences social and physical isolation of the UCA campus and students.

### vi. Access to Professional Studies

Finally, professional education facilities are mainly located in the city center, with an agrarian college located in Aitmatov. Located in areas also associated with higher economic activity, there is an assumption that adults are able to access both work and education easily. However, additional facilities further toward the East of the city, and in Kotormo may improve the service area coverage of these facilities.



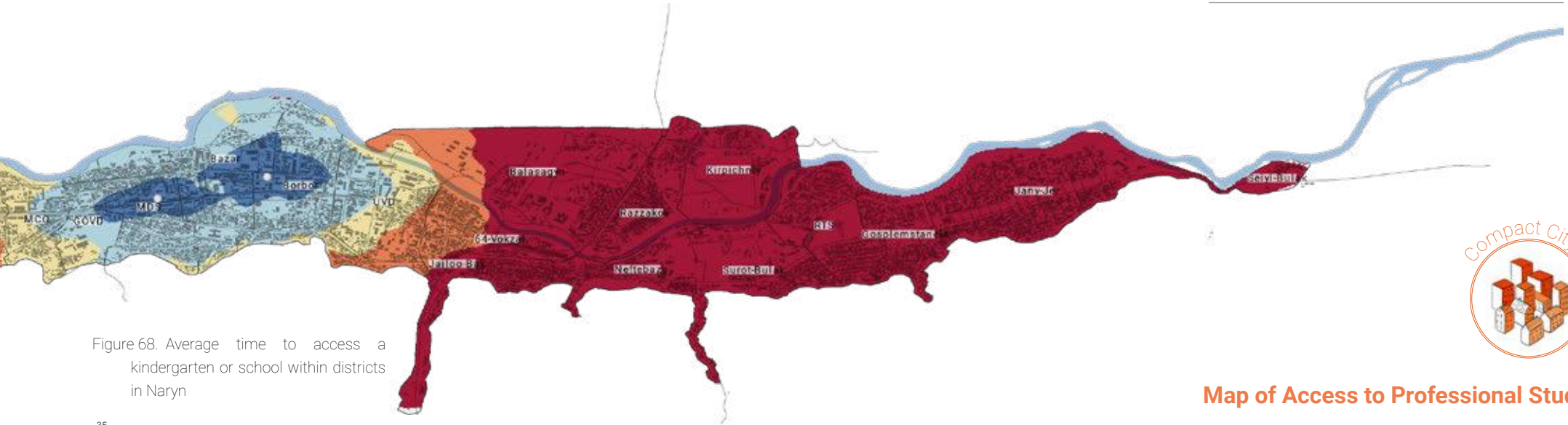


Figure 68. Average time to access a kindergarten or school within districts in Naryn

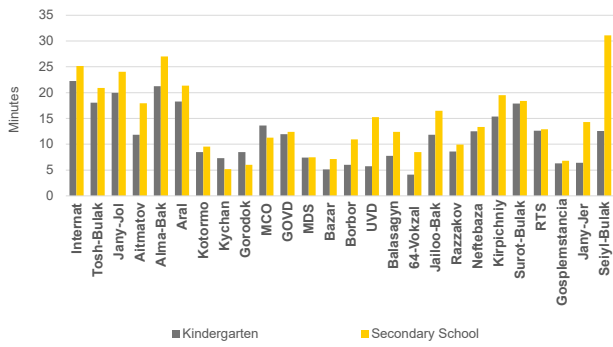
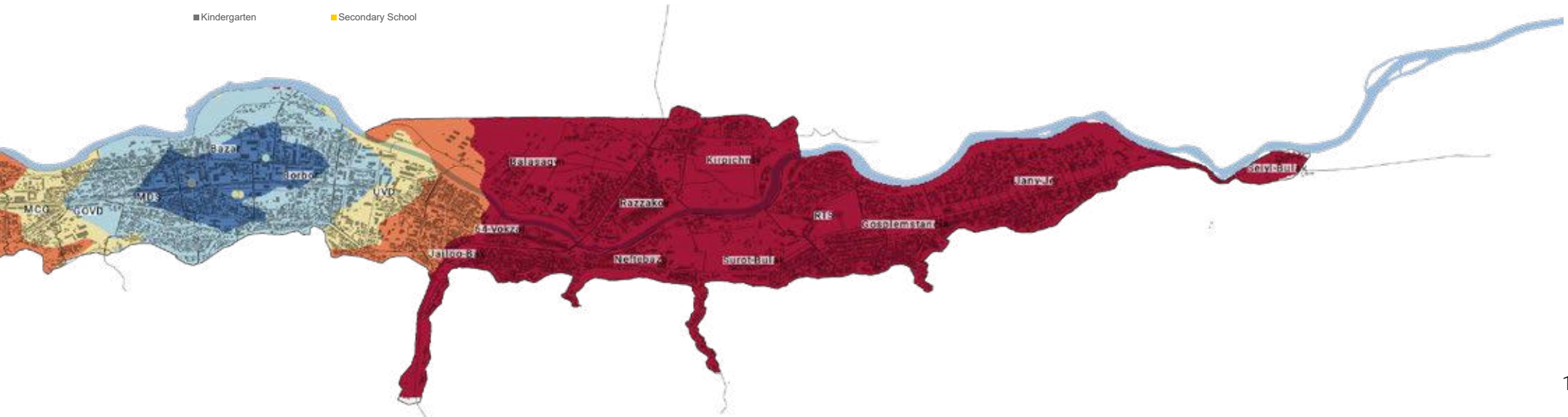
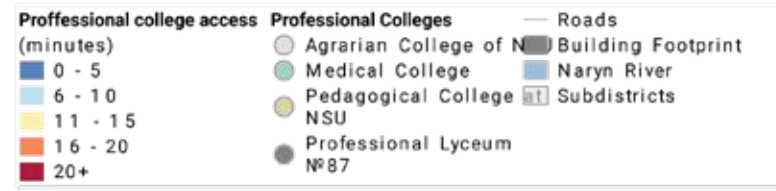
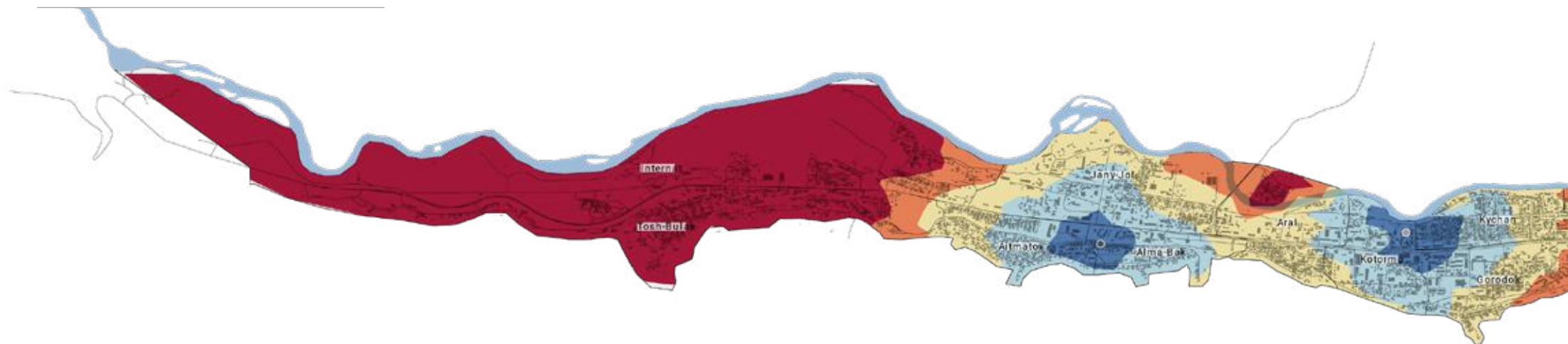


Figure 71 provides an average time to access a kindergarten or school for each sub-district. Although it does not provide the level of detail as outlined in this chapter, it does effectively highlight the lack of accessibility to these key facilities. The average time to access a school and kindergarten is more than 10 minutes in 14 sub-districts.

Map of Access to Professional Studies







## Health Facilities Analysis Approach & Outcomes

### i. Access to Clinics

The analysis highlights the accessibility of the four polyclinics in the city (clinic 5 non-functioning) and the low accessibility of the population to these facilities within a 15 minute walking distance. 27299 people cannot access a polyclinic within 15 minutes' walk. These people are predominantly in MDS as well as in Bazar, Tosh Bulak and Internat, and Balasagyn and Razakov.

This highlights the importance and efficiency in renovating clinic 5, in order to reduce the deficit in the town centre. Notwithstanding clinic 5, Internat and Tosh Bulak, as well as a significant number of people in the East of the city will still have a low access to a key health facility. This therefore also suggests that it is important to increase the accessibility (through road connectivity) or number of basic, general health facilities in this area.

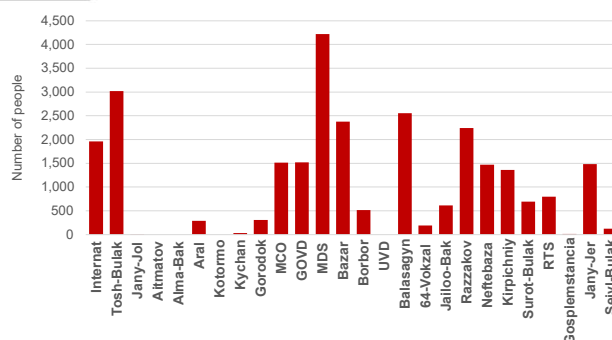


Figure 69. The number of people who have more than a 15 minute walk to access a general clinic (polyclinic)

Accessibility is assessed in relation to senior citizens, to highlight and help to prioritise areas of the town where senior citizens cannot access key health facilities. Similarly, Tosh Bulak, MDS and Razakov are highlighted as having the worst accessibility to clinics for senior citizens.

Additional data collected through the ministry of health indicated that clinic 4 had a current capacity for 1500

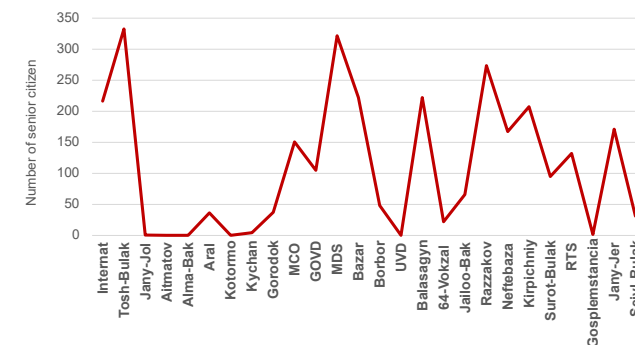
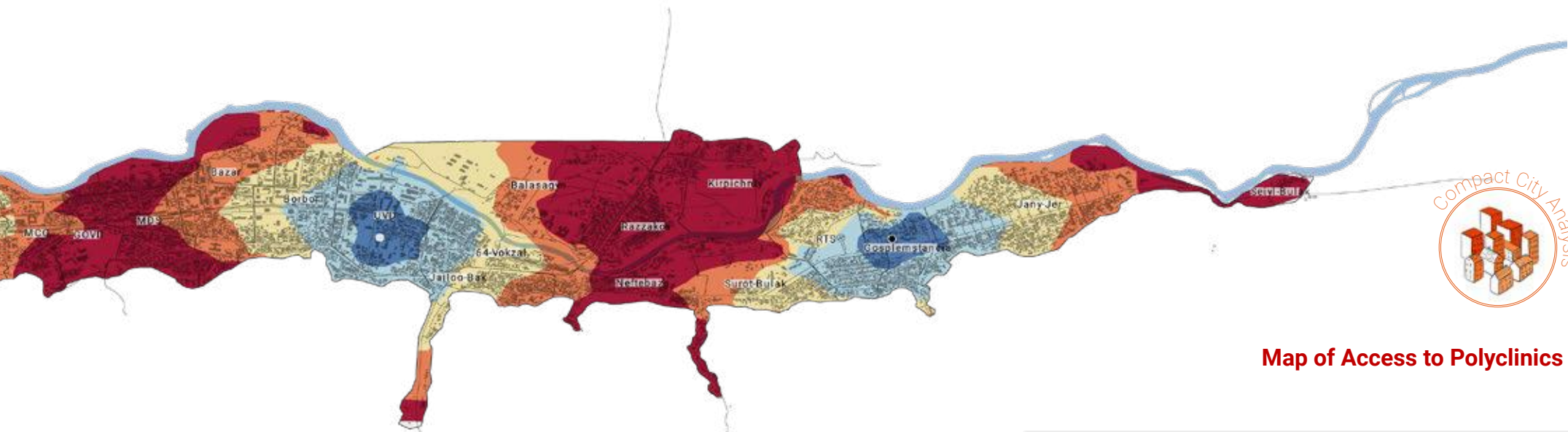


Figure 70. The number of senior citizens (60 yrs +) who have to travel more than 15 minutes to a health facility

people, but is currently servicing around 6592 people. This may be further exacerbated by the planned housing development by the city's governor in Jany Jer. A two storey project design has already been drafted by the ministry.



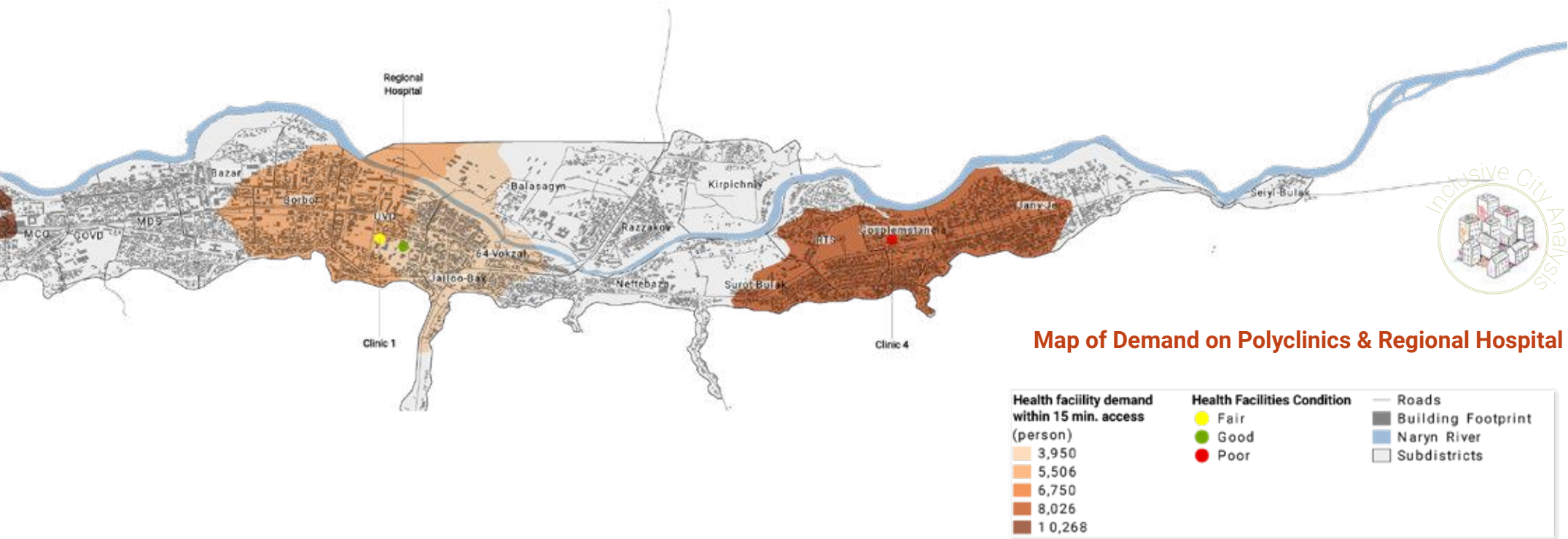
Map of Access to Polyclinics





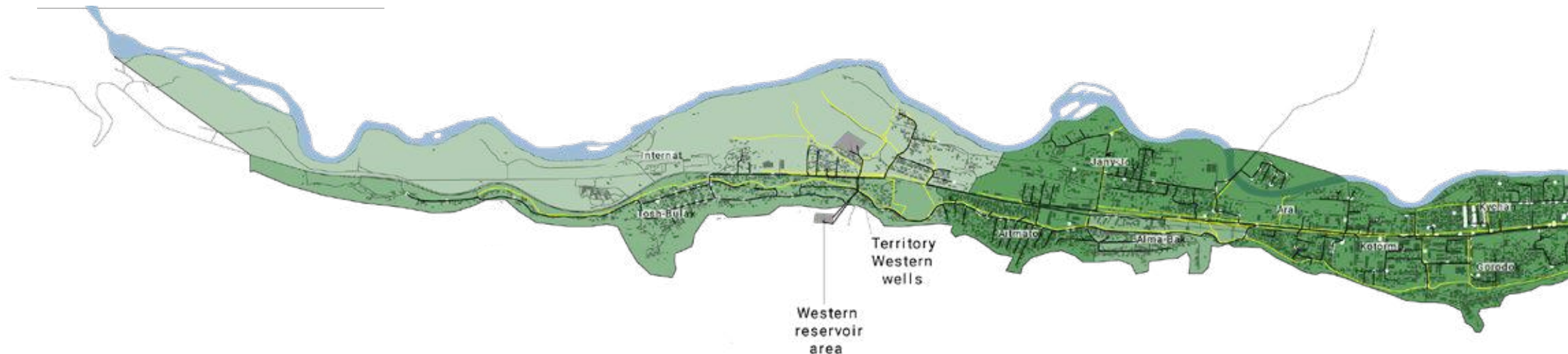
## ii. Demand on Clinics

This analysis provides an indication of the demand on each health facility. As these are general clinics, they may have a certain benchmark for capacity for each service area. Considering the current population, and population density, and assuming each individual accesses the closest facility, this analysis indicates the highest population dependency within a 15 minute walk is on clinic 2. It also highlights clinic 4 has having the next highest population dependency, with a poor building quality. This evidence assists in determining deficits in the city, not only of access but also of demand. The minimum demand within 15 minutes' walk is 3950 people, which is considered high for one health clinic.



Map of Demand on Polyclinics & Regional Hospital





## Utilities Analysis Approach & Outcomes

### i. Water Network

To assess the spatial distribution of access to water, data from the survey undertaken within the IHA was used.<sup>5</sup> This provided an indication of whether a household has access to drinking water (the answers varied between no, partial and yes) and what the source of the drinking water is (for example through the water network pipeline, through wells and pumps located throughout the neighbourhood).

This provided an indication as to the degree of access that each building in the neighbourhood has to more

<sup>5</sup> No data regarding individuals' or household access to water was obtained, so the survey was used which covered over 50 per cent of the city's households. This means that the findings from those that were surveyed were used to estimate the values for the rest of the city, using natural neighbor technique.

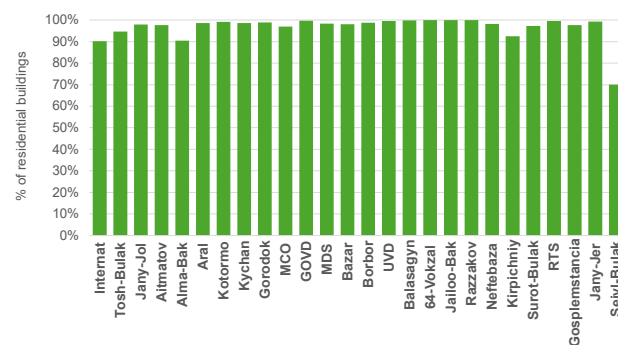


Figure 71. % of residential buildings connected to water pipeline

or less water network infrastructure. Access to the water network pipeline was weighted higher than access to a publicly shared pump nearby.<sup>6</sup> The map highlights that almost all (above 96 percent within each sub-district) buildings have access to water (either from a water pipeline or from pumps on the street).

<sup>6</sup> The survey results were associated with a building, rather than a household (as there may be multiple households within one building). Therefore the outcomes related to water access are also based on building units, not households.

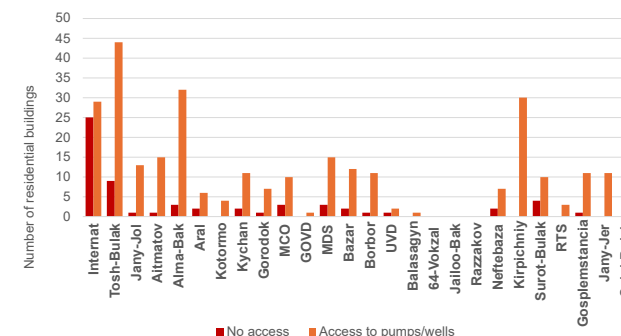


Figure 72. Residential units lacking access and dependent on wells

Some buildings, however only have access to wells and pumps and fewer reported not to have access to any drinking water. A maximum of 25 residential building units do not have access to drinking water in Internat. These buildings are mainly in Internat and Tosh Bulak.

The masterplan suggests that there will be an increase in water demand at household level, from 5800 m3/d in 2020 to 18'818 m3/d in 2040 (100l/d\*p in household



and 50l/d\*p in street standpipes).<sup>7</sup> Therefore, a more compact urban growth will provide a more financially effective water network, by increasing capacity and quality of existing pipelines, rather than extending (and maintenance) of new pipelines.

<sup>7</sup> IHA



## ii. Sewage Network

The analysis was based on qualitative data collection on a field mission, and also through the presence of sewage network in the town.

The analysis highlights that sewerage covers the residential buildings city centre with 100 percent coverage recorded in Kychan, Balasagyn and 64-Vokzal.

However, 10460 buildings in the city are not connected to the sewerage network which is mainly in the East and West of the city, with the highest number of residential buildings in Jany Jer (1382 residential buildings).

This may be not only due to the lack of the network but also the cost of connecting to the network, or the lack of sewage pumping facilities. Although the sub-district Borbor and Bazaar have a relatively high accessibility to the sewerage infrastructure, some areas of higher land in the North of these sub-districts may require additional pumping.

Although there are current deficits, plans to expand the service are covered in the EBRD Project to the East and West of the city which is being implemented in collaboration with the Swiss Government (see map for planned sewerage extension areas).

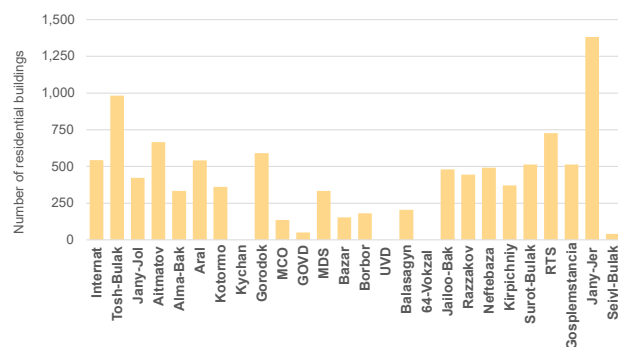
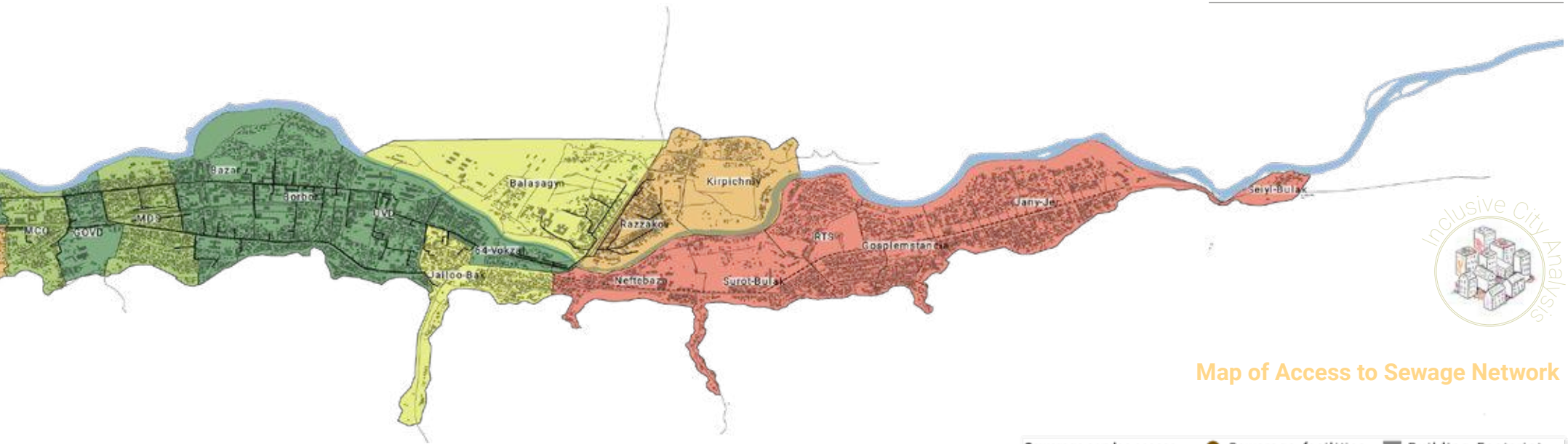


Figure 73. Number of residential buildings with no sewage access



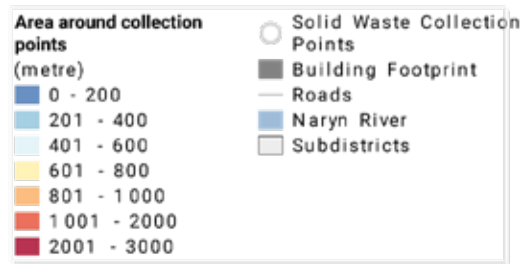
Map of Access to Sewerage Network







## Map of Access to Waste Collection Points



### iii. Solid Waste Access

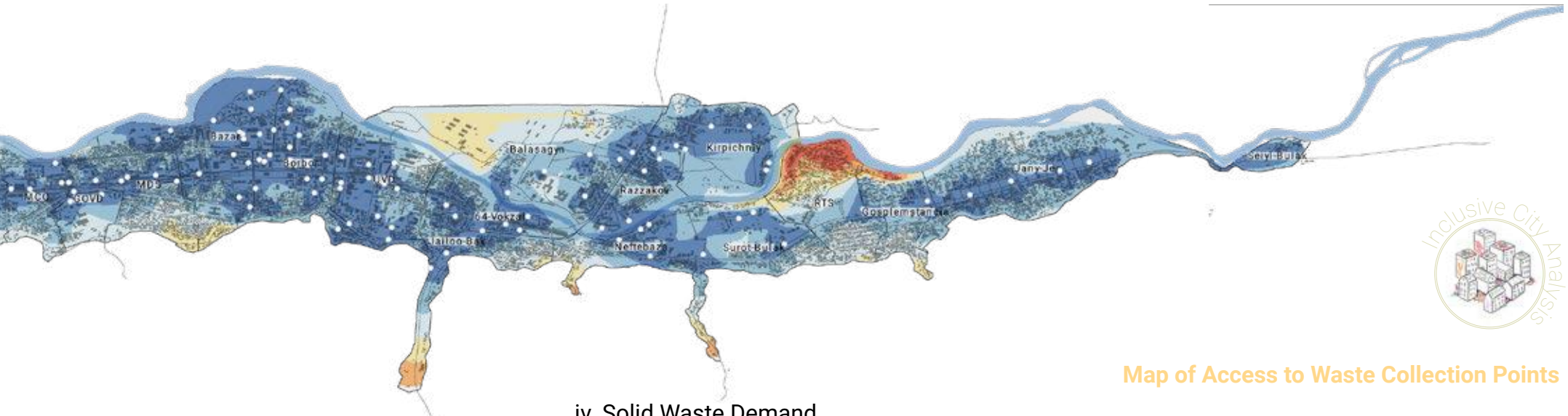
Hard or solid waste disposal is also lacking in Naryn. Waste is collected from each house, scheduled per district at one to two times weekly. 31155 people do not have access to a waste container within 200m of their house, with the highest population (3160 people) in Jany-Jer.<sup>5</sup> This area, as well as RTS and MDS are likely to experience challenges associated with refuse spill,

<sup>5</sup> This is a suggested indicator for full access to solid waste disposal (Waste Wise Cities, 2020, UN-Habitat)

blocked irrigation networks and, over time, polluted soil and ground water.

Jany-Jer is an area at risk from mudflow, meaning that irrigation channels are needed for mitigation, and also may increase the spread of waste if not adequately addressed through sturdy collection points. However, distance from a collection point is in some cases a choice to avoid being close to the waste which is not separated and thrown in containers of a poor quality, creating an unpleasant and unhealthy urban environment. Wind aggravates this by spreading the rubbish into the street.





Map of Access to Waste Collection Points

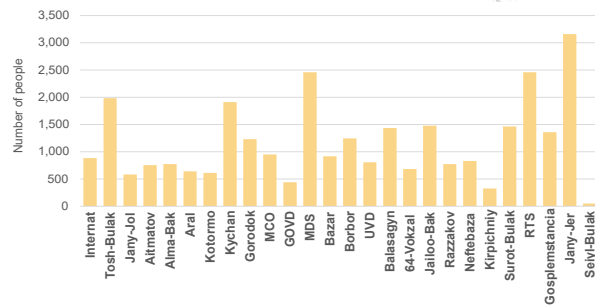
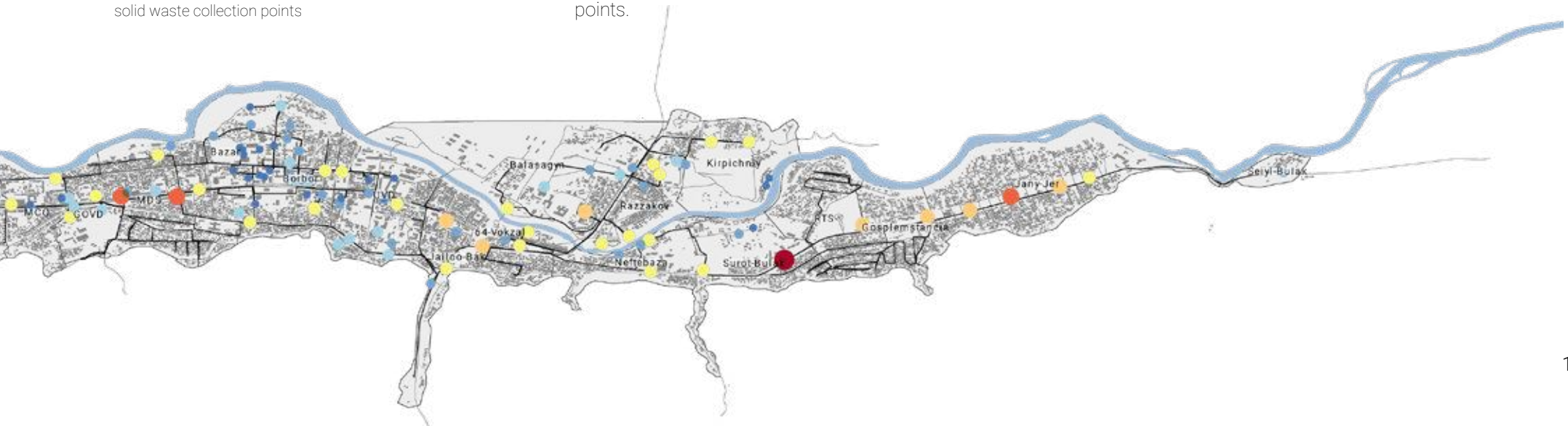
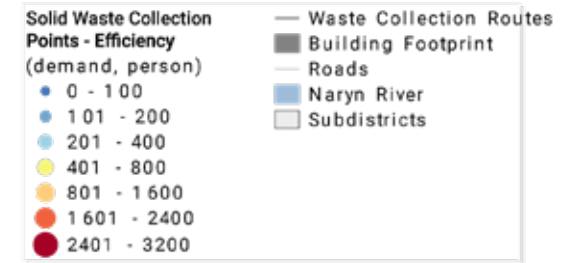


Figure 74. Number of people outside of 200m distance from solid waste collection points

#### iv. Solid Waste Demand

The map highlights waste containers that have a higher and lower demand, assuming that the population will access the closest waste container and can provide an indication for which areas may experience over-used containers that may require additional maintenance. Therefore, the challenge is not only the capacity, location but also the size and design of waste containers that must be addressed. Points highlighted in the East show a higher demand and lower provision of waste collection points.





## v. Energy Provision

Energy provision and the capacity of networks are sufficient for the city, and for the projected population growth. Most of the sub-districts have full connectivity to the electricity network. Only Tosh Bulak, Jailoobak, Surot Bulak and Gosplemstancia and Jany Jer have 60 percent coverage.<sup>5</sup>

<sup>5</sup> There is no data collected for Selyi Bulak, however, it is evident through the extent of the electricity network that there is some infrastructure coverage in this sub district.

## Carbon Use: Health and Sustainability

Kyrgyzstan's capital, Bishkek today ranks as second in the world for air pollution. Similarly, the use of coal for heating is a major issue in Naryn leading to poor air quality and the consequential health issues (with associated financial burden).

Causes of poor air pollution come from use of coal for heating in homes, coal-fired central heating, power station, municipal dump and reliance on cars. In addition, the land fill which is close to the city's North Eastern corridor, leading to Bishkek and to China, is regularly burned, causing highly harmful pollutants into the city's air.

Electricity is generated nationally through hydropower plants. However, due to both the quantity produced, as well as the energy loss through transportation, energy supply through the national electricity supply is not sufficient. The population in Naryn are therefore forced to use brown coal to heat their houses. Loss of forests in the area may also be reflective of wood being used for heating.

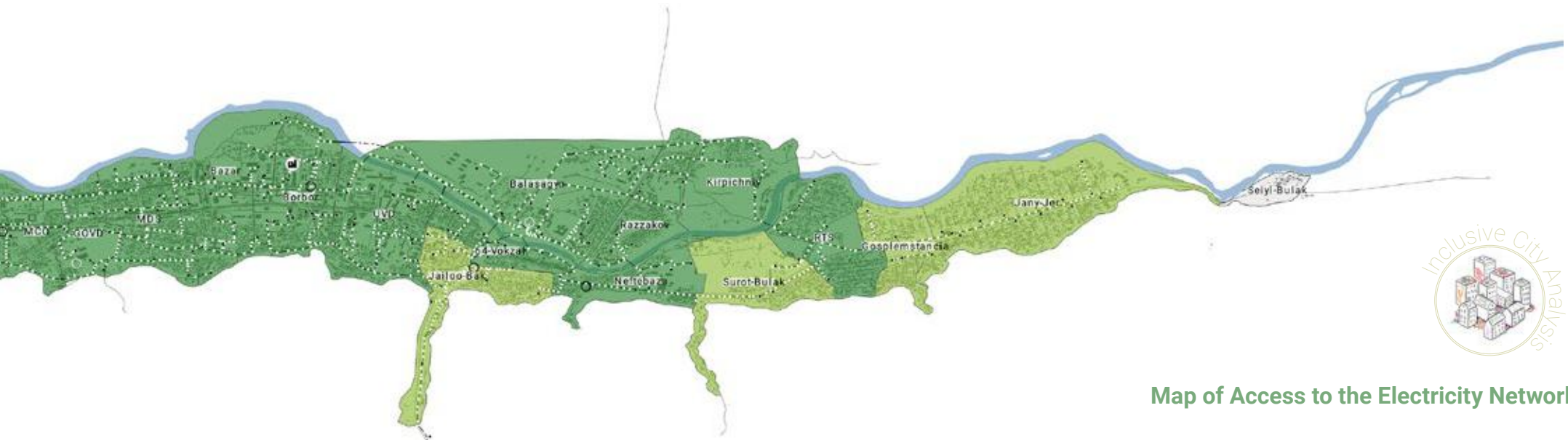
Brown coal, or lignite, is a cheaper source of energy than black coal as it is closer to the ground surface and easier to mine. It can often allow countries to mine domestic sources of energy independent from other country's supplies. It is cheaper to mine and so cheaper for consumers.

However, there are a number of issues associated with brown coal. Primarily, it releases extensively more CO<sub>2</sub> and gas into the atmosphere when burning. The associated emissions from burning brown coal include dust and ash, NO<sub>x</sub> and SO<sub>2</sub>. Due to the low energy efficiency and quick burning time, more coal is needed to provide the same energy as black coal and other energy sources.

Consequential health impacts include cardiovascular disease and lung cancer, respiratory diseases and TB. Poor quality housing can exacerbate this issue further (see housing quality in the hazard vulnerability chapter)

Attempts to monitor air pollution and environmental degradation have been undertaken by a Kyrgyz NGO, MoveGreen. Current data can be found at [movegreen.org](http://movegreen.org).





Map of Access to the Electricity Network

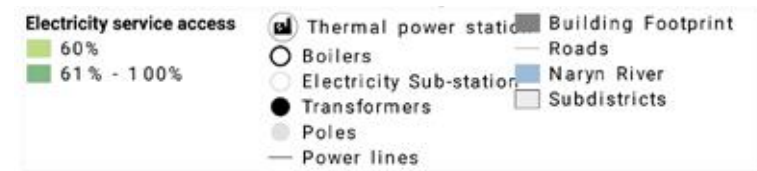
kg. In addition, a recent agreement at COP28 included the development of increased hydropower and renewable energy projects. In addition, the Kyrgyz Republic have set a target of reducing greenhouse has emissions by as much as 44 per cent by 2030 and achieving carbon neutrality by 2050. Although the country generates almost 90 per cent of it's power from hydropower, this is not sufficient for the population's need.

More locally specific interventions are needed that resolve both the inconsistent national hydropower supply and the loss in energy through transportation from the national hydropower plant, to reduce pollution in Naryn.

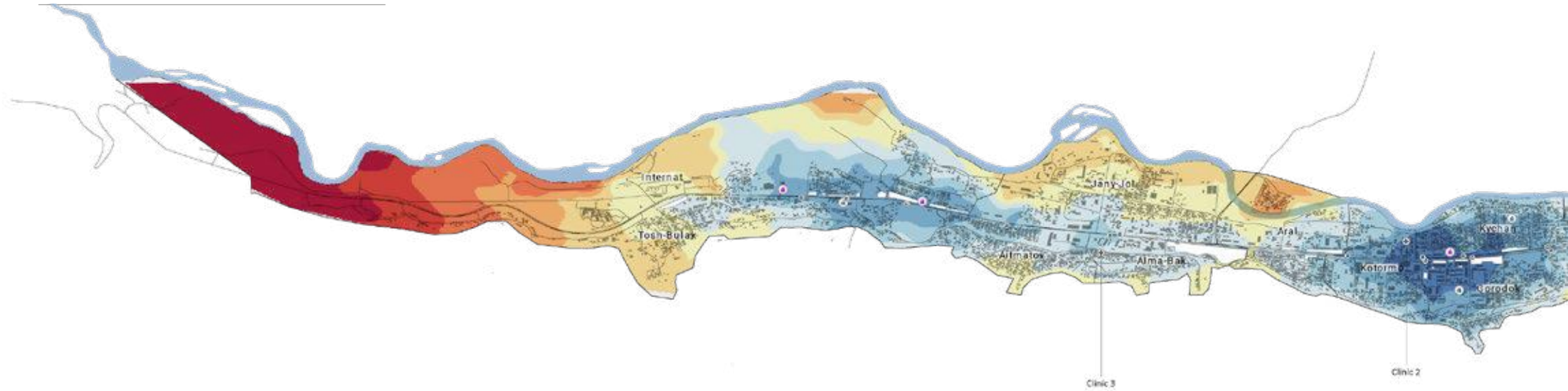
Due to the constant and high frequency flow of water in the Naryn river, resolutions may include more local production of energy, for example smaller, regional hydropower plants that could allow for income generation through re-selling of excess energy to the national grid. Storage of energy could ensure that seasonal changes in electricity supply can be mitigated against, for example through batteries.

Additional retrofitting measures such as housing insulation, insulating heating boilers and pipelines, filters in chimneys in private homes and awareness raising.

Reducing the cost and availability of sustainable source of energy is key to the city's growth, will reduce health issues and financial burden, and provides a potential for an increased tourism economy and university town vision.



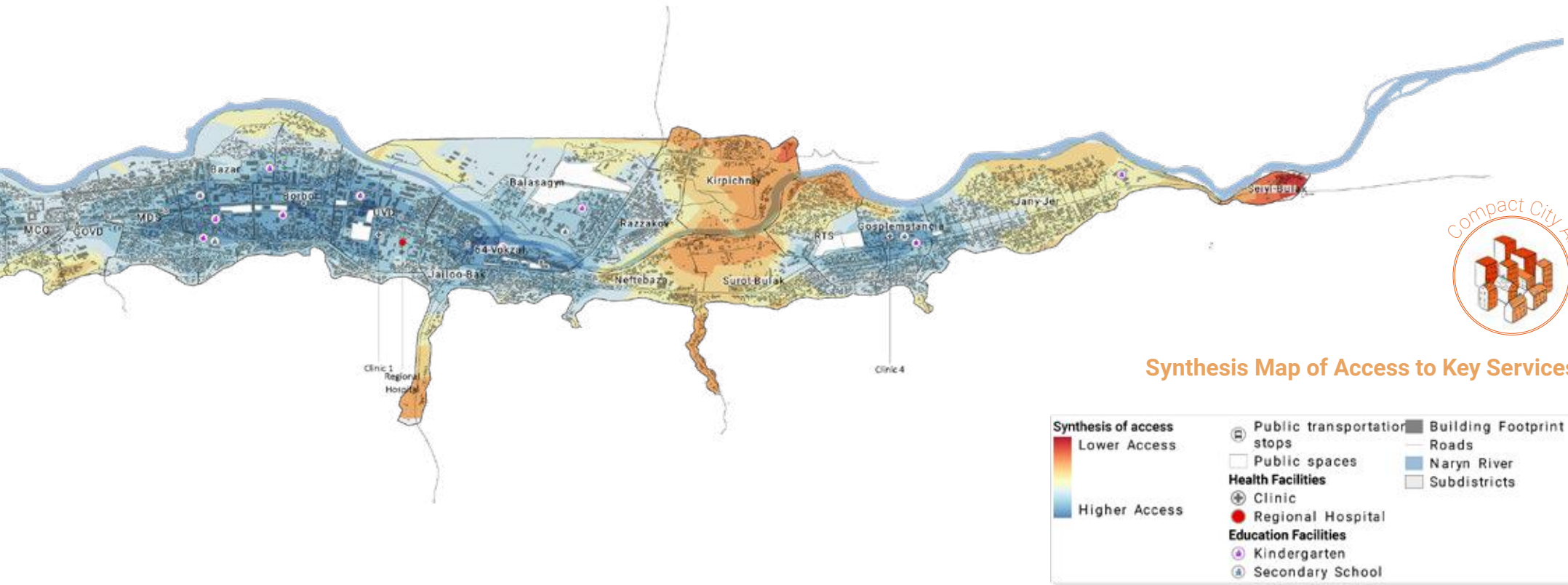




To summarise accessibility in Naryn, this map provides an overview of access to key services. The analysis uses a 15 minute walking distance to provide an indication of the accessibility of key services to the majority of the population. Access beyond 15 minutes walk is considered, for this analysis, a deficit. The analysis includes key facilities; all four functioning clinics and the regional hospital in order to assess access to every day and fundamental health care provision to the majority of the population; Bus stops; Kindergartens and public Secondary Schools to assess access to education for all (this does not include specialised or private facilities) and Public Spaces.

It is interesting to note the lacking access to all key facilities in the North of Aral where there is a density of residential units. This area overlaps with at risk areas, described in the following chapter. In some cases, improving access may exacerbate risks to infrastructure and people by encouraging development in 'at risk' areas. An integrated approach to resolving challenges highlighted in this profile is necessary to resolve the converging challenges in Naryn.

It is also surprising to note lacking access for residential areas in Kirpichniy, and areas of Surot Bulak near to the river as these areas are relatively close to multiple key facilities. Increased connectivity (through small, connecting roads, or through bridges) may more efficiently improve the service access to these areas.



## Complex Vulnerability Profiles and their Impact on Enhancing Resilience

When considering the assessments made around Naryn's built-up areas, its population, and the provision, distribution and proximities of key services and infrastructure, alongside its topographical conditions and the impacts of climate change, Naryn presents a complex profile of vulnerability. While there is evidence to sufficiently understand the type of hazards facing the city, the related mitigation planning and effective response system seems to be lacking. There is sufficient data on the type and location of hazards, but not enough information on urban planning strategies that take these into consideration, leaving a percentage of population and critical infrastructure exposed in hazard zones. Lack of planning for adequate relocation of hazard-exposed

population, and lack of spare and adaptive capacity of infrastructure and services, further reduces the resilience of the city and its ambitions to secure a resilient future.

### Key Findings

Hazard Vulnerability is a complex and multi-fold challenge in Naryn. Hazard mitigation, adaptation and management are not included in development planning at the regional or national level and there is limited evidence of comprehensive, integrated and unified state lead hazard vulnerability assessments. The Ministry of Emergency Situations (MoES) is in charge of implementing state policy in regard to safety, monitoring natural events and risks and organising response to hazards. There is not a strong response and mitigation plan for natural hazards due in part to lack of national and local level funding.

Citizen perception of hazards remains reactive rather than preventative and there is little budget reserved for

mitigation and adaptation. High turn-over of staff within the MoES department also hinder the strength and skill of the department. Within NURP, a programme of support is outlined in the 'Roadmap for MoES'.<sup>5</sup> This highlights a series of training programmes as well as the collection of vulnerable building units and GIS database as well as on-going monitoring and reporting of building damage and support of nature-based solutions.

Therefore, the following analyses are provided to support this approach and provide insight into vulnerable areas of the city, infrastructure, facilities and people.

Due to the regional scale of seismic activity, no analysis has been undertaken at the city scale (see below for building sensitivity analysis). However, Naryn is vulnerable to expected earthquakes. In addition, the single fire department in the city is unequipped to manage fires within buildings higher than 4-5 storeys. Currently this is not a challenge, however considering recent plans to construct

---

5 Unpublished, Roadmap for MoES, AKAH, 2023

9-storey housing in the East of the city, this must be taken into account. In addition, measures against earthquakes are outdated (Decree of the Government of the Kyrgyz Republic dated January 29, 2018 No. 58).

The hazard that is the most frequent and destructive is mudflow. This occurs every 3-5 years and is usually occurring in late spring and early summer months when there is snow melt and increased rainfall. Mudflow includes debris flow as well as flooding from all ravines on both sides of the city.

Flooding also occurs in Naryn, usually in late summer months, with a water rise and flooded plains. This is increasingly unpredictable due to climate change impacts; variable weather patterns and sudden high rain fall. Additional underground flooding occurs to a lesser extent due to irrigation water from households, as well as some outflow from the BNC.

Erosion of the Naryn river is evident due to collapsing

riverbanks. Some housing is located close to the river edge and there is limited tree planting or riverbank reinforcement.

There is an increase in the number of emergencies associated with global climate change.

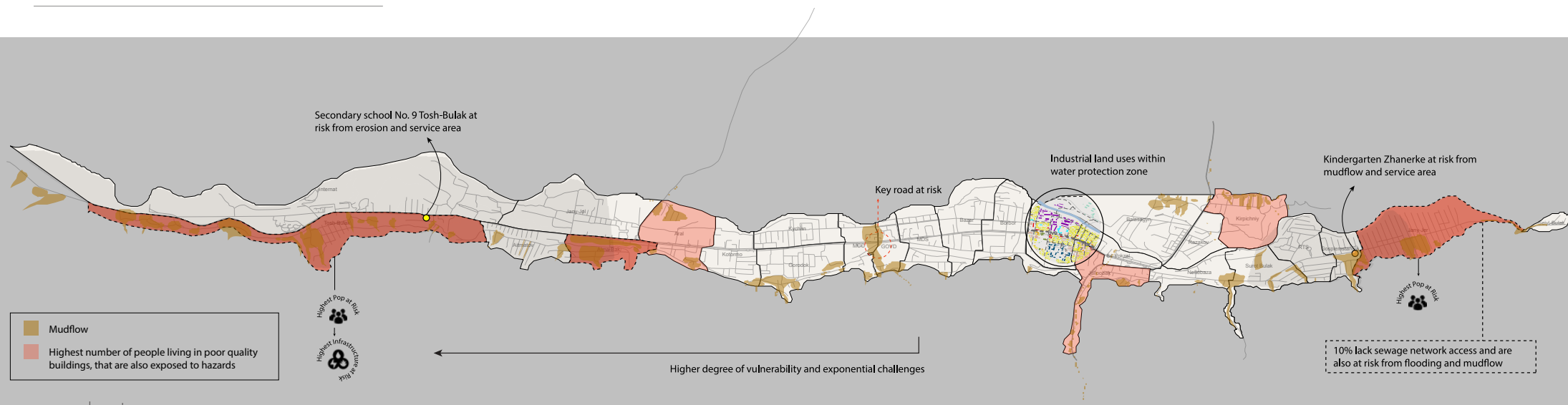
Overlaid with population data, the assessments highlight particular exposure for vulnerable groups, including children in certain sub-districts, especially those in the West and East of the city which additionally experience poor connectivity and basic service provision. This helps to identify areas that should be prioritised when considering resilient planning, and also contributes to an understanding of the areas where potential exclusion of groups can be found.

The analysis that follows suggests that the highest density of infrastructure at risk from hazards is in Tosh Bulak. In addition to this, the highest number of people at risk are in Tosh Bulak and Jany Jer.

Also, the highest number of 'poor' quality buildings are recorded in Tosh Bulak, Jailoobak and Jany Jer. To add to this, when considering the highest number of people living in poor quality buildings that are also exposed to hazards, these too are found in Tosh Bulak and Jany Jer, as well as in Alma Bak, Aral, Jailoobak and Kipichniy. These areas are highlighted to be considered priorities for hazard mitigation to reduce the risk to infrastructure, and adequately address buildings of poor quality and their serviced population numbers.

Of particular note is that 10% of buildings in Tosh Bulak, Jany Jer and also Alma Bak, whilst being at risk from mudflow and flooding, also do not have access to the sewage network, causing a potential risk of pollution to





ground water.

Most people in Naryn are at risk from mudflow, followed by flooding and then erosion. Infrastructure at risk is predominantly water and electricity (due to the prevalence of water and electricity network provision).

When assessing the road network and its risk from hazards, the most impactful road network at risk is in the city centre, due to its role as the primary axis, and exacerbated by the linear city structure - meaning that this is a key route and will greatly impact the functioning of the city.

When considering facilities at risk from hazards, of particular note is Kindergarten Zhanerke, which is at risk from mudflow in Gosplemstancia, the Sanitary and Epidemiological Station in Jailoobak which is at risk from flooding, and Secondary school No. 9 Tosh-Bulak which is at risk from erosion. Kindergarten Zhanerke is considered to be a good quality structure, whereas

Secondary school No. 9 Tosh-Bulak is considered to be of poor quality infrastructure.

If this kindergarten no longer was functioning, it is estimated that residents in Surot Bulak, RTS and Gosplemstancia, and around half of residents in Jany-Jer would lose access to a kindergarten within a 15-minute walk. Due to the high demand on kindergartens, and the poor quality of the secondary school, these two facilities are considered a high priority for renovation and mitigation.

Reinforcing building materials and structures, increasing planting adjacent to these buildings, and considering alternative access routes to these facilities may improve the versatility of the city's functioning during hazardous events.

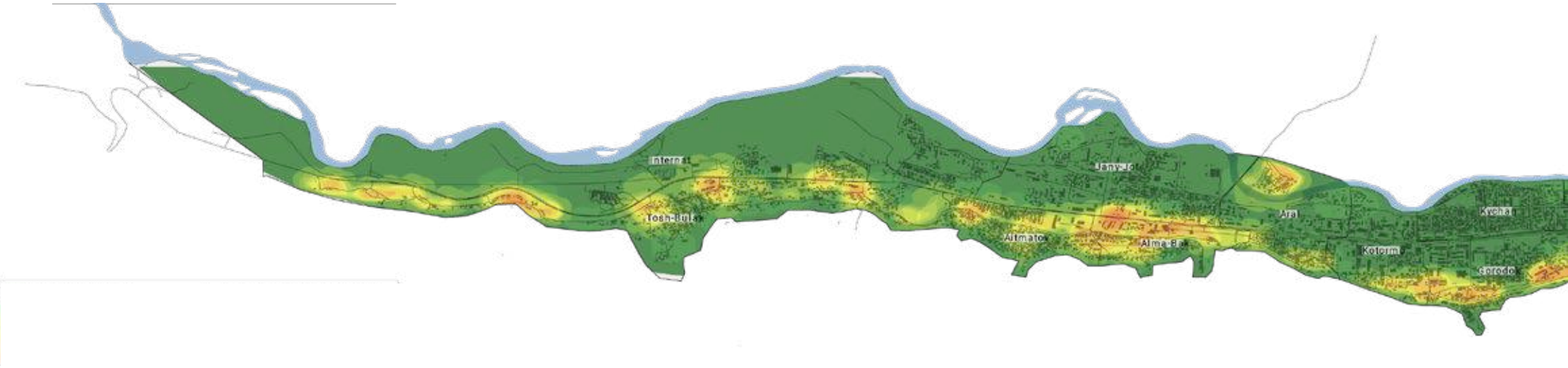
In addition, considering alternative facilities for temporary use may be useful to improve the adaptability of the

population during hazardous events. Usually schools are used for shelters and storing safety equipment in case of emergencies. However, four facilities (including a secondary school, professional college, university building and clinic) are considered poor quality. Identifying which facility can be used in case of emergency, and improving the quality of this building may increase hazard adaptation and safety.

Although these measures will address the immediate threat of hazards, it is necessary to identify resolutions to mitigate against future damage. In the case of Secondary school No. 9 Tosh-Bulak for example, investigating further the cause of erosion can assist in identifying low-cost, easily implementable interventions that will reduce the exponential challenges caused by erosion in this area. For example, tree planting can reinforce the soil and reduce impacts of erosion but must be planted both in the area impacted, as well as areas impacted by mudflow nearby.

When considering the water protection zone, and industrial land uses adjacent that pose a potential risk of pollution, UVD is a priority for further investigation and mitigation measures.

An example of the convergence of challenges arises from the following analyses. It is evident that building quality and degree of income security is weaker in the West of the city. Effects of hazards are exponentially experienced by the population in this area. Health impacts of poor building quality, lower income levels and consequential burning of coal rather than electricity use, as well as less accessible facilities and reduced accessibility to key facilities that are at risk from hazards imply a more vulnerable population in the city's Western sub-districts. Reading the following chapter will provide greater insight into the impacts of hazards and household vulnerability in Naryn.



Hazards & Vulnerability Approach & Outcomes

i. Infrastructure at Risk from Hazards

Density of infrastructure at risk is highest in Tosh Bulak (in m). This includes water, irrigation, electricity infrastructure and a small proportion of sewerage infrastructure, which are all impacted by mudflow and

erosion. Mudflow has the greatest area of impact in the city, with a high degree of flooding impact in the city centre, and erosion in the West of the city.

Electricity and water infrastructure are the most impacted infrastructure type in the city, likely due to their high quantity of provision and distribution. These are most densely affected in Tosh Bulak (with 2081 m of electricity infrastructure at risk from mudflow), MCO, Jailoobak, Gorodok, from mudflow, and in Bazar from flooding.

This map highlights the density of infrastructure that fall within hazard zones. Hazard zones are defined using hazard vulnerability risk assessments undertaken by AKAH, completed in the IHA in 2023. This map includes both the meters of infrastructure at risk (meters of water pipelines, of sewerage pipeline, irrigation channels and electricity cables), as well as the individual units (electricity poles, water pumps). This map highlights the key areas at risk are predominantly in the south of the city, as well as one key area in the city centre (MCO and GOVD). Areas at risk in the North of the city appear to be less integrated

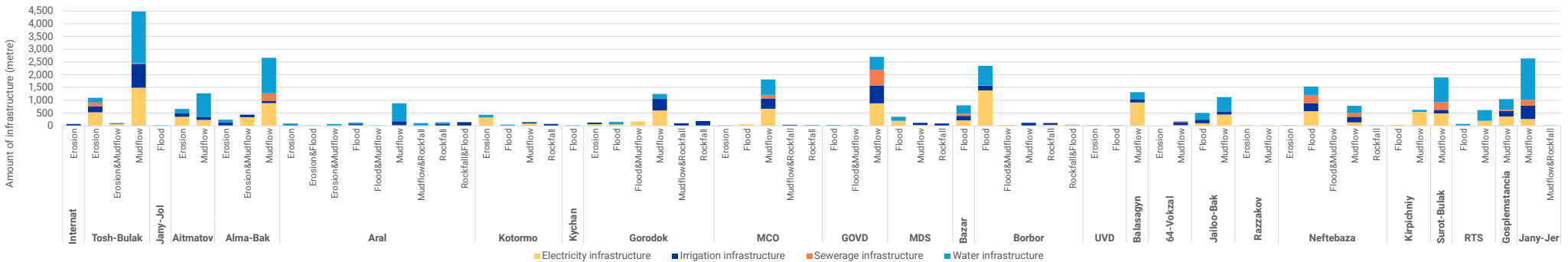
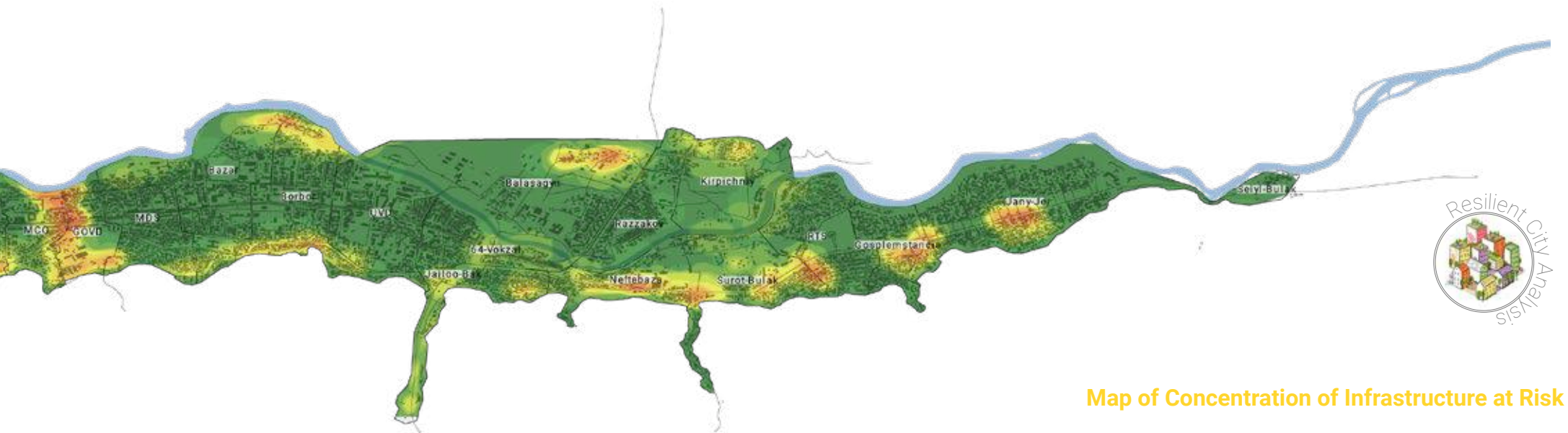


Figure 75. Amount of infrastructure at risk from each hazard type within each sub-district



into the city's fabric, fragmented by the river or Torugart Road. Additional analysis can be run to further investigate the households and their vulnerability in these areas.

Map of Concentration of Infrastructure at Risk





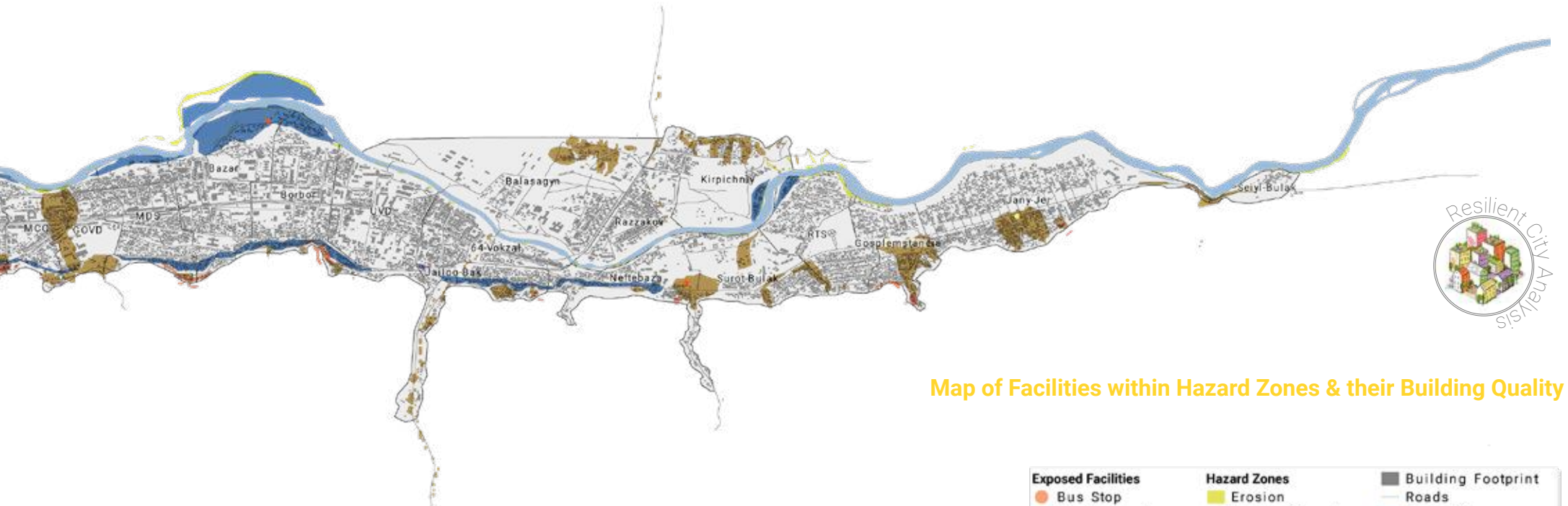


## ii. Facilities at Risk from Hazards

In addition to infrastructure at risk this map overlays the key facilities at risk from all hazards. Key facilities include those that not only would cause disruption to a large proportion of population if no longer functioning, but also those facilities that play a role in recovery and shelter following a hazardous event.

Of particular note is Kindergarten Zhanerke which is at risk from mudflow in Gosplemstancia, the Sanitary and Epidemiological Station in Jailoobak which is at risk from flooding, and Secondary school No. 9 Tosh-Bulak which is at risk from erosion. Kindergarten Zhanerke is considered to be a good quality structure, whereas Secondary school No. 9 Tosh-Bulak is considered to be of poor quality infrastructure.

This analysis methodology has grouped 'overlapping' hazard areas, in order to highlight that an area with 'compounded' hazard risk are considered separately to those areas facing only one hazard. This is due to the linkage between hazard causation and impact, and that these areas may face exponential risk which must be mitigated against specific to the compounding hazards which affect it.



Map of Facilities within Hazard Zones & their Building Quality

Exposed Facilities	Hazard Zones	Building Footprint
Bus Stop	Erosion	Roads
Sanitary and Epidemiological Station	Erosion&Flood	Naryn River
Kindergarten	Erosion&Mudflow	Subdistricts
Secondary School	Flood	
Industrial	Flood&Mudflow	
Shops	Mudflow	
Condition of facility	Mudflow&Rockfall	
Good	Mudflow&Rockfall&Flood	
Poor	Rockfall	
	Rockfall&Flood	

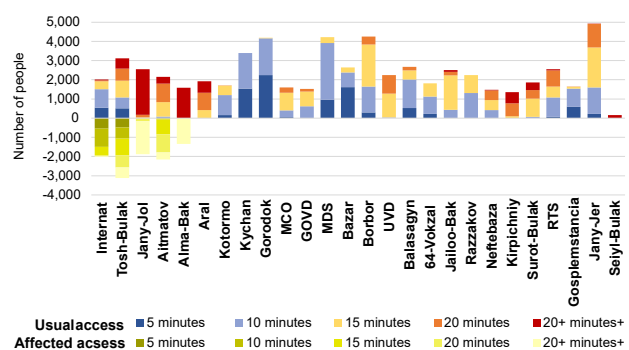


Figure 76. Number of people impacted if Secondary School No. 9 is no longer in operation

iii. Impact of Facilities at Risk from Hazards

The following analysis highlights the impact that these facilities have on the population’s access to key services if they are no longer in operation due to hazard impacts. It compares accessibility to key services for people in all sub-districts without hazard impact, and the potential disruption this would cause to accessibility.

Figure 79 highlights areas in the West of the city that would be affected if the secondary school was no longer functioning. As both kindergartens and schools are built according to state determined benchmarks of capacity and service area, these facilities would impact a large number of people. The comparison of usual and affected access to secondary school No. 9 shows that the accessibility of 6491 residents in 5 sub-districts are estimated to be affected, whereas the access of Internat, Tosh-Bulak and Aitmatow would be decreased by 100 per cent per cent within 20 minutes.

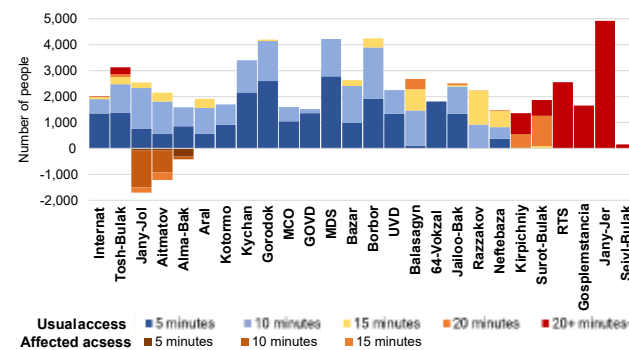


Figure 77. Number of people impacted if the bus stop at risk is no longer functioning

Figure 80 shows the impact that a bus station that is currently at risk would no longer function. Due to the quantity and the location of bus stops, this only impacts three sub-districts with a highest number of 1500 people that would mostly have to travel an additional 10 minutes in order to access public transport.

People in Jany Jer, Gosplemstancia, RTS and to a lesser extent, Surot Bulak are most affected by the hazards impacting the kindergarten at risk as they have to travel to another kindergarten.

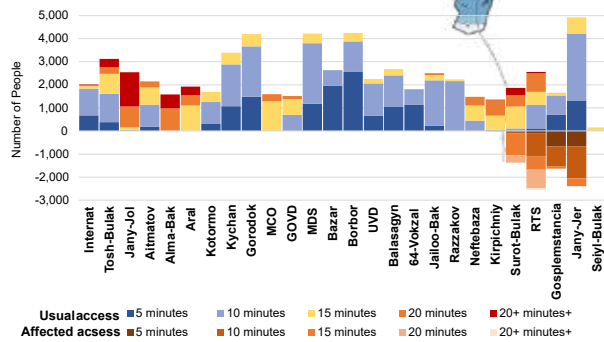
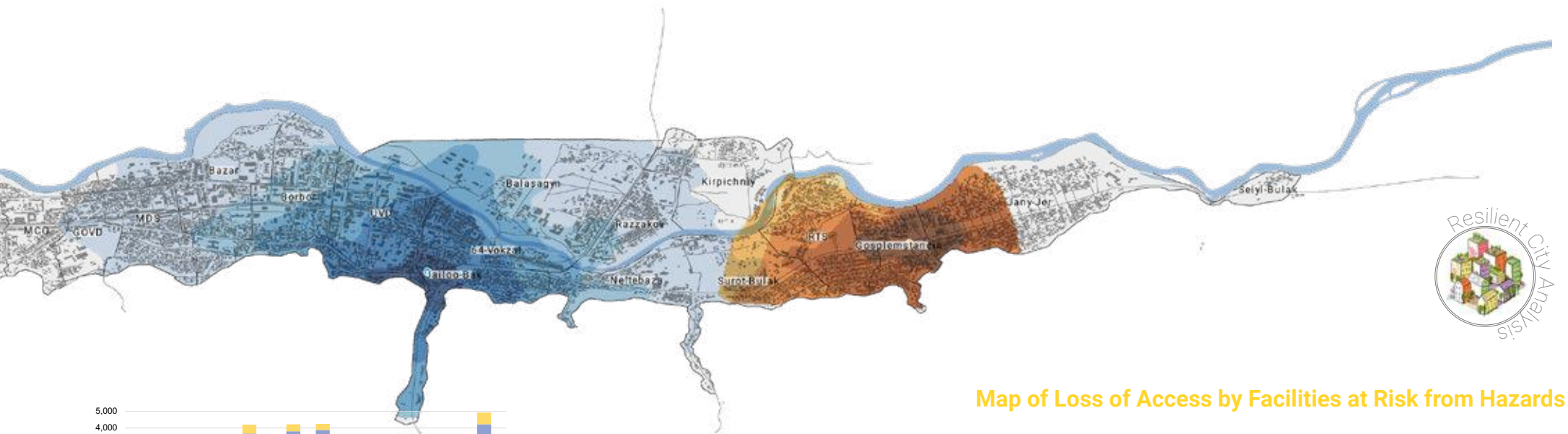
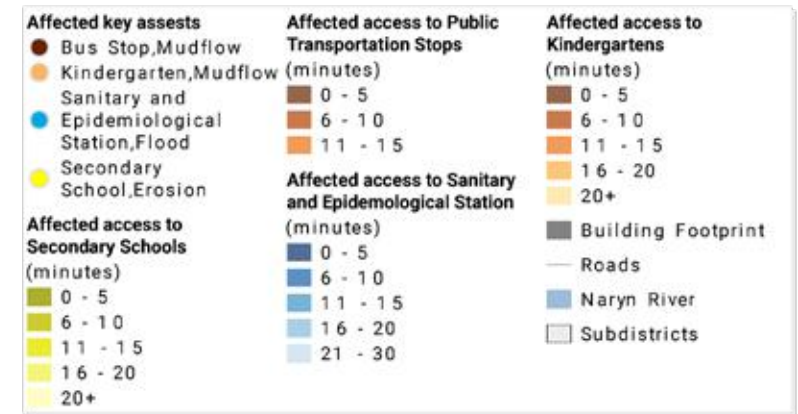


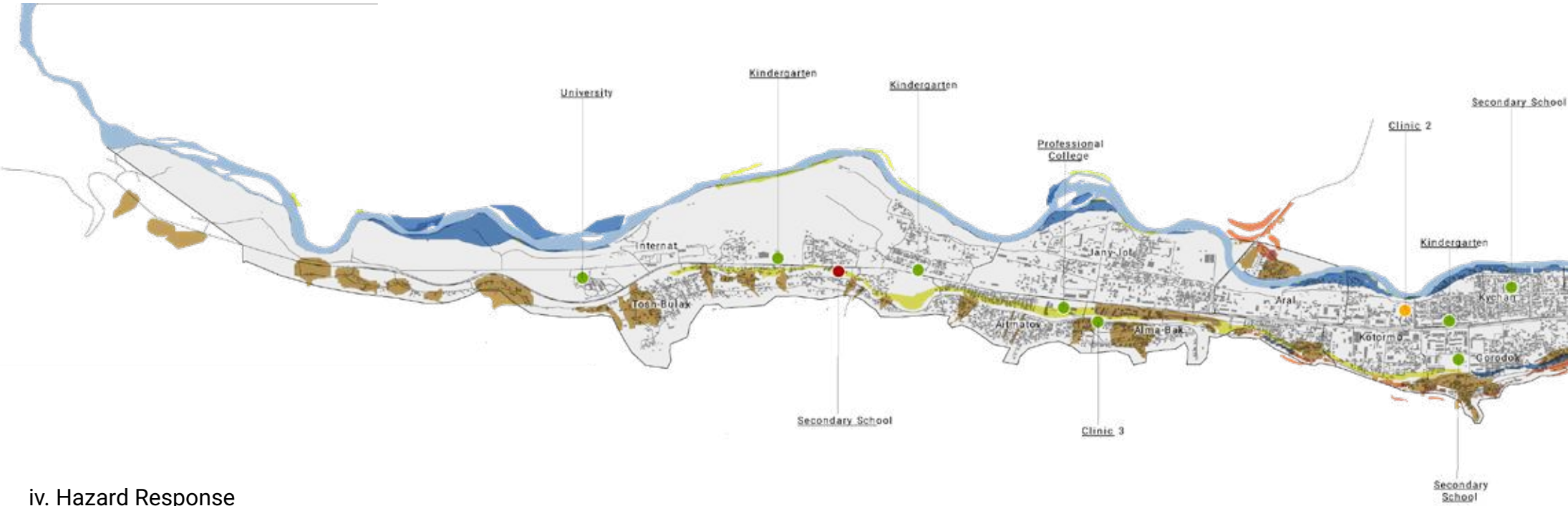
Figure 78. People impacted if Kindergarten Zhanerke is no longer operational

Within 20 minutes of access to Kindergarten Zhanerke a total of 7954 resident's accessibility is affected. When 15 minutes of access is considered, it is estimated that the residents in Surot Bulak, RTS and Gosplemstancia would lose all access and 49 per cent of residents in Jany-Jer would lose their access to Kindergarten.

## Map of Loss of Access by Facilities at Risk from Hazards







iv. Hazard Response

Additional facilities including university buildings, and health centres have the potential to function in case of a hazardous event. This map highlights all facilities that are currently understood to play a role in risk resilience. Although there is no integrated plan for hazard response, usually schools are used for shelters and storing safety equipment. However, four facilities (including a secondary school, professional college, university building and clinic) are also poor quality. Quality of buildings are measured using both the material of the building, and how permanent the structure is.

For example, those buildings that scored as ‘poor’ are adobe, semi-permanent structures. Buildings considered ‘fair’ are made of wood that are permanent, plywood or shipping container structures that are semi-permanent and shipping containers that are temporary. Kindergarten Zhanerke which is at risk from mudflow in Gosplemstancia, is good quality, whereas Secondary school No. 9, in Tosh-Bulak which is at risk from erosion

is considered poor quality. It is therefore important to consider protective measures for this secondary school.

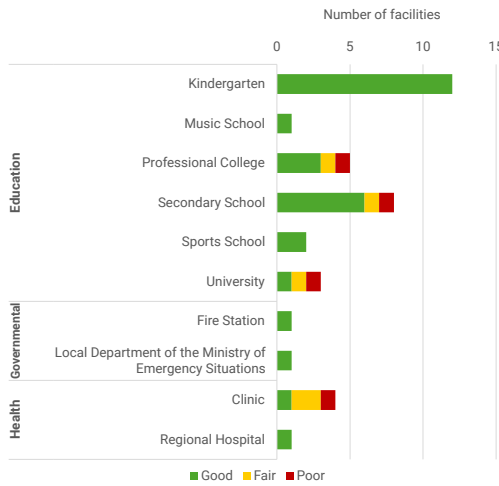
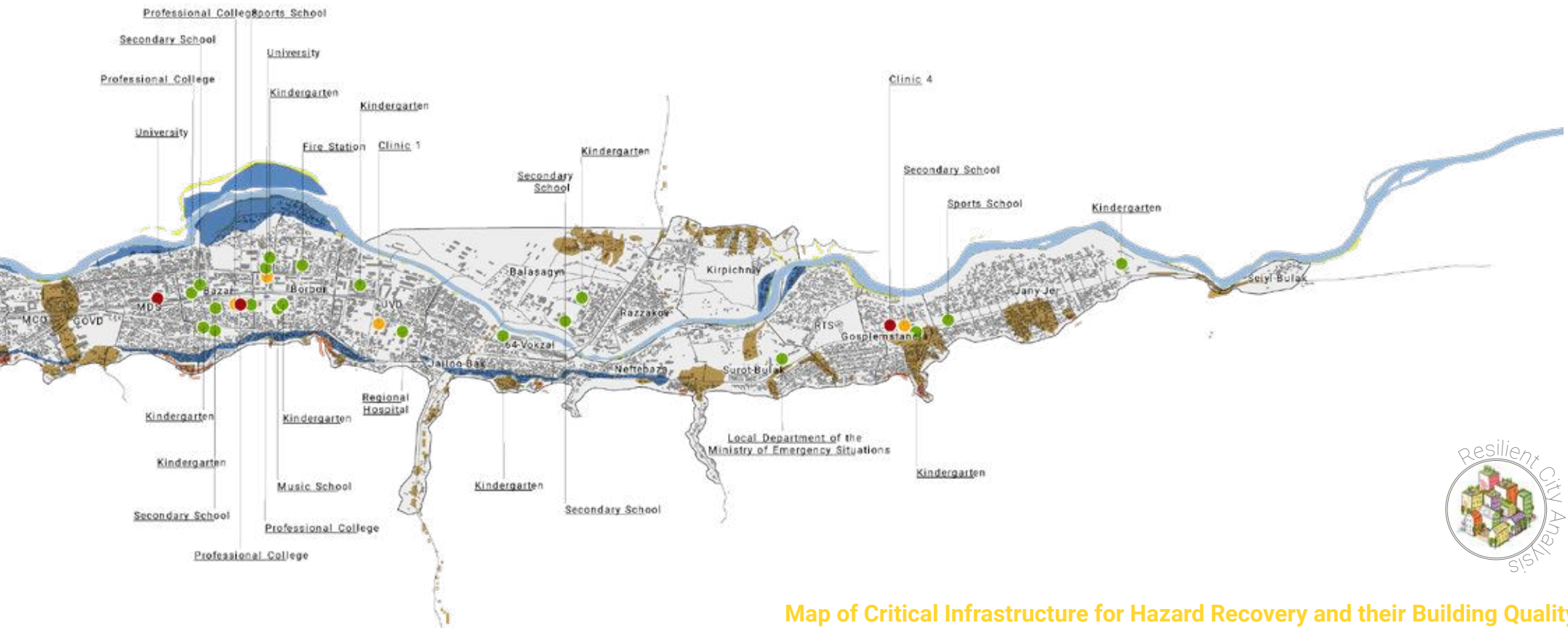


Figure 79. Building quality for all key facilities that could facilitate post-hazard recovery

Building type	Building Type	Building Condition
Adobe	Semi-Permanent	Poor
Foundation- No construction	No construction	Poor
Wood	Permanent	Fair
Plywood / Sandwich panel	Semi-Permanent	Fair
Finnish- veneer panel construction	Semi-Permanent	Fair
Container	Temporary	Fair
Aerated concrete / block	Permanent	Good
Aerated Block / concrete	Permanent	Good
Reinforced concrete	Permanent	Good
Brick	Permanent	Good
Hollow casted blocks	Permanent	Good
Sand block- Concrete Blocks	Permanent	Good
Cinder block - cement Concrete hollow blocks	Permanent	Good

Figure 80. Building quality assessment (source: IHA)



Map of Critical Infrastructure for Hazard Recovery and their Building Quality

Critical facilities physical sensitivity	Hazard Zones	Building Footprint
<ul style="list-style-type: none"> <li>Fair</li> <li>Good</li> <li>Poor</li> </ul>	<ul style="list-style-type: none"> <li>Erosion</li> <li>Erosion&amp;Flood</li> <li>Erosion&amp;Mudflow</li> <li>Flood</li> <li>Flood&amp;Mudflow</li> <li>Mudflow</li> <li>Mudflow&amp;Rockfall</li> <li>Mudflow&amp;Rockfall&amp;Flood</li> <li>Rockfall</li> <li>Rockfall&amp;Flood</li> </ul>	<ul style="list-style-type: none"> <li>Building Footprint</li> <li>Roads</li> <li>Naryn River</li> <li>Subdistricts</li> </ul>



v. Road Network at Risk

In addition to key facilities and infrastructure at risk, the following assessment considers the road network in order to understand disruption to mobility and access in the city in the case of a hazardous event. The highest quantity of road length, at around 4000m at risk from hazards is found in Tosh-Bulak.

The type of road most impacted by hazards are residential roads, with a total of 20348.81m of residential roads falling within hazard impact areas. Primary roads, which in the case of Naryn is predominantly the central axis, has a total of 714 meters of length of road that fall within a hazard impact area.

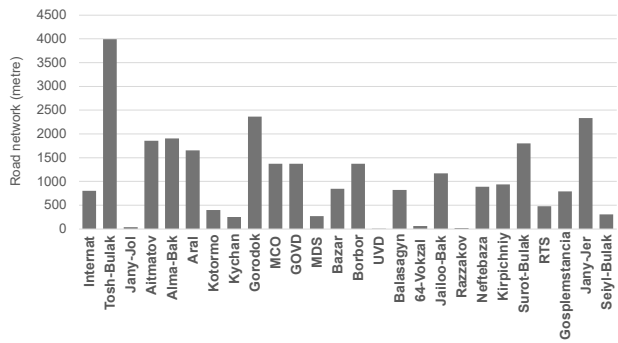
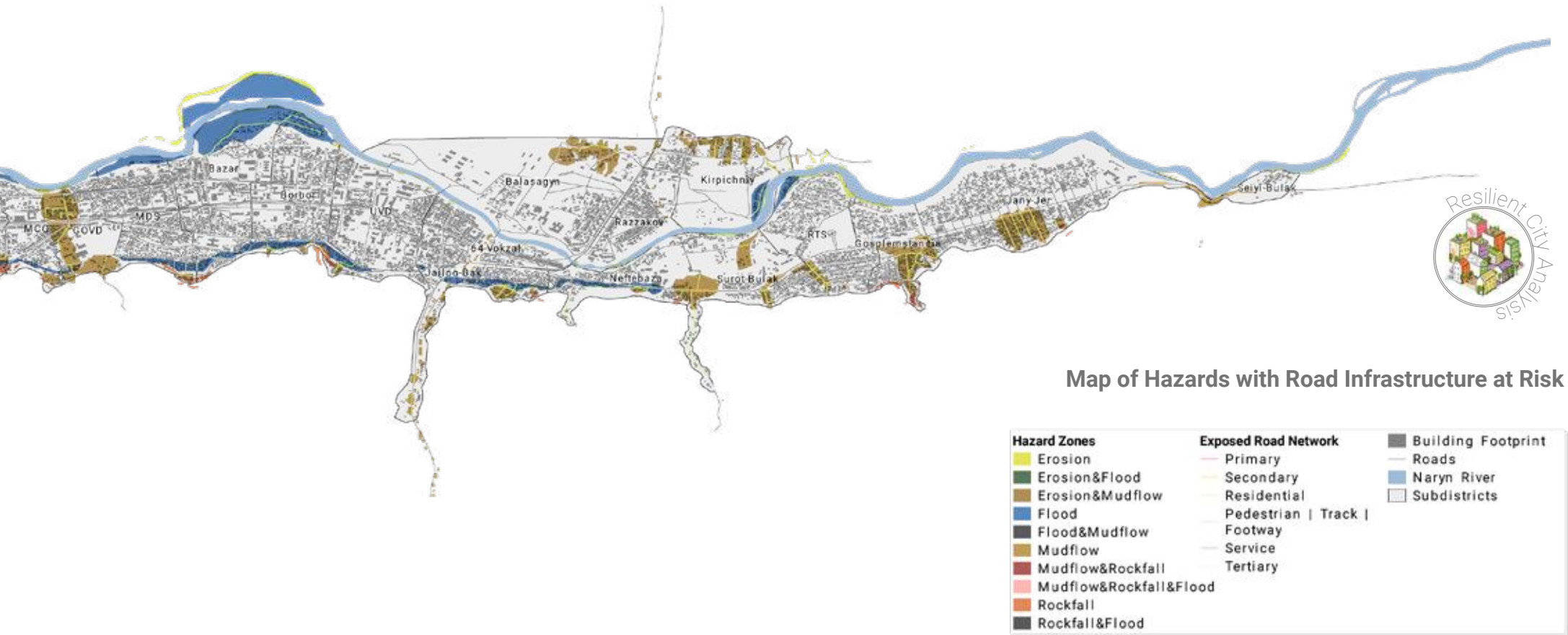


Figure 81. Total Lenght of Road Infrastructure at Risk



Map of Hazards with Road Infrastructure at Risk





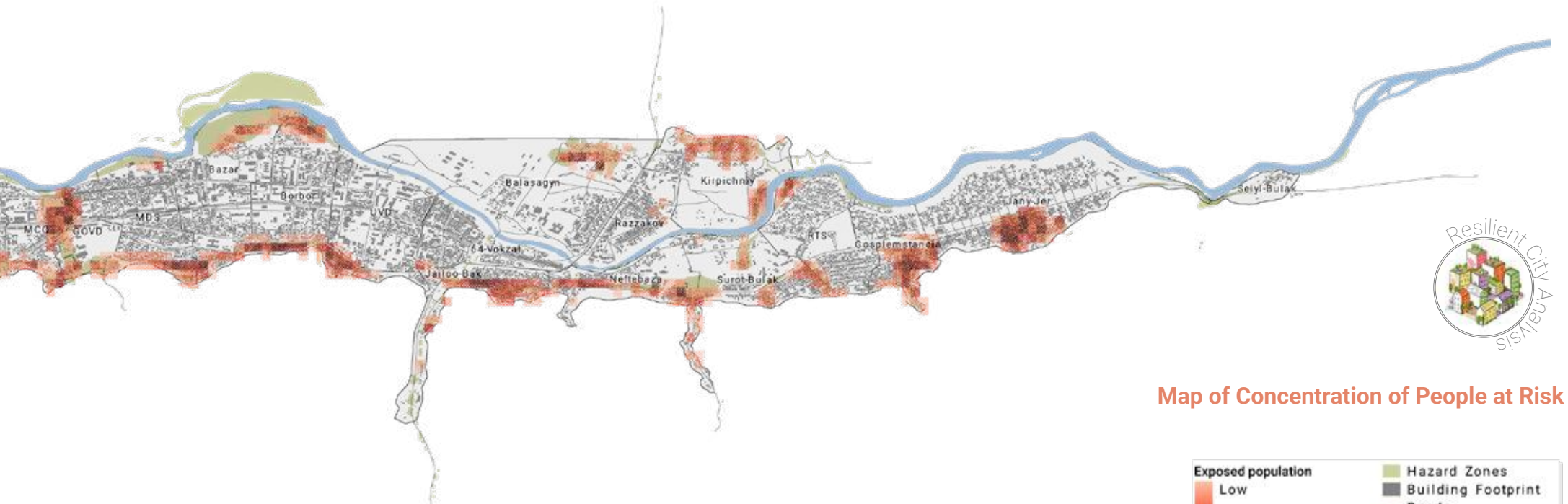
## vi. Population at Risk

The next analysis highlights areas that have the highest density of people at risk from hazards. This is based on residential units and population density and is overlaid with the hazard impact zones. The highest number of people at risk are in Tosh Bulak and Jany Jer, which align with the greatest amount of infrastructure at risk from hazards. However, in addition to these three sub-districts, Gorodok and Borbor have a high number of people at risk from hazards (1060 and 911 respectively), and a less significantly high amount of infrastructure at risk. This may be due to a higher or denser population in these areas. It is important, therefore to consider both infrastructure and population at risk in order to prioritise mitigation interventions. When considering the population at risk as a proportion of the total population of that sub-district, Alma Bak has 70 per cent of it's population at risk from hazards.

Assessing vulnerable groups, Alma Bak has an exponentially higher number of children (age 0-15) at risk than any other sub-district, as well as one of the highest number of senior people (age 60+) at risk.<sup>5</sup>

---

<sup>5</sup> Numbers of children (age 0-15) and senior population (60+) were identified through the survey that was undertaken as part of the IHA. This was then adjusted to apply to the rest of the city to provide an estimated distribution of vulnerable groups across the city.



Map of Concentration of People at Risk

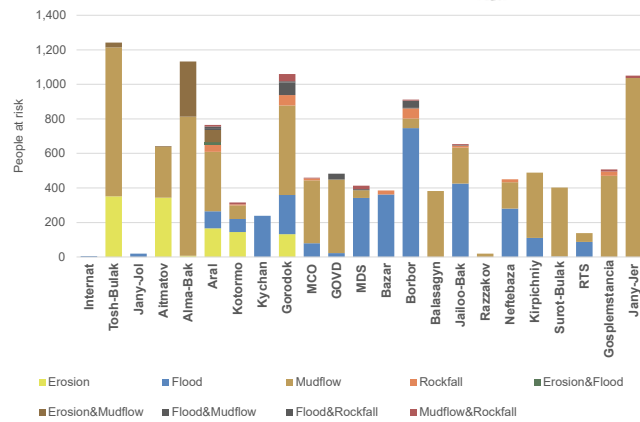


Figure 82. Number of people at risk from each hazard (hazards are grouped when spatially overlapping)

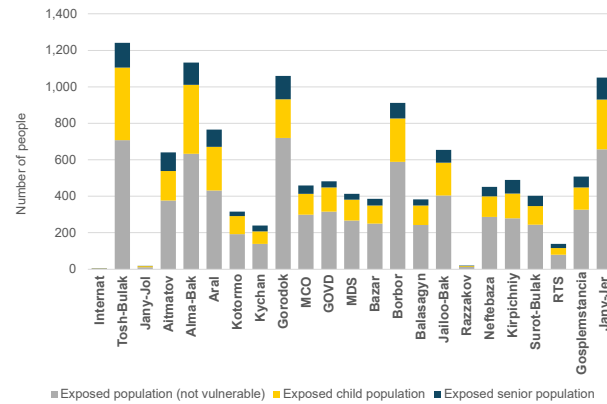
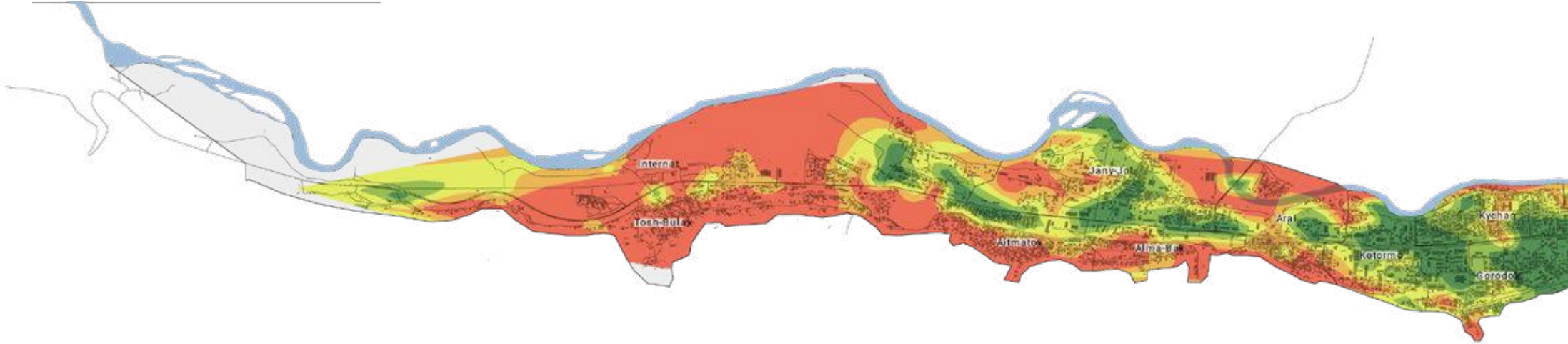


Figure 83. Disadvantaged groups at risk of hazards within each sub-district



vii. Housing Quality

In addition to understanding the infrastructure, roads, and population at risk from hazards in Naryn, the following analysis includes the housing quality and income sensitivity. These sensitivity analyses provide an understanding of economic vulnerability and is an important consideration when assessing the impact of hazards in Naryn as well as confounding challenges associated with accessibility to basic services and public facilities.

Similar to the assessment of the quality of buildings related to public facilities, housing quality is also identified through the IHA and uses both the building material and how permanent the structure is. This assessment uses an estimate from the survey to suggest areas of the city with a higher or lower quality construction and resilience against hazards.

This analysis highlights lower quality buildings in the West of the city, and toward the North and Southern edges, with a higher quality of building along the Lenin Road. This graph helps to show the number of buildings within each sub-district, based on building-density, and indicates that there is a much higher number (around 800) buildings in Jany Jer, Jailoobak, and Tosh Bulak that are potentially 'poor' quality. There are generally higher quality buildings in MDS and Borbor.

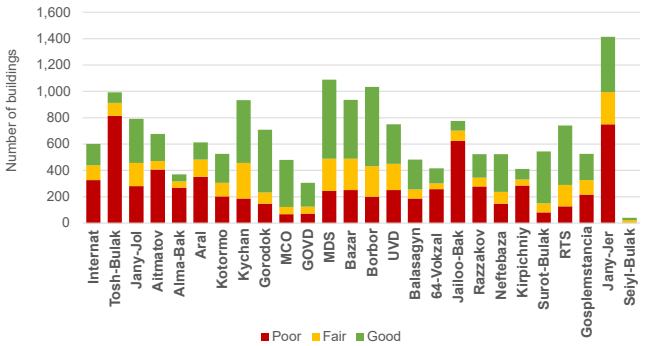


Figure 48: Buildings that are 'poor', 'fair'and 'good'

Tosh Bulak, Alma Bak, Aral, Jailoobak, Kirpichniy and Jany Jer all have 400 or more people that are at risk of impacts from hazards that also live in buildings that are considered poor quality. There is a general increase in poor quality buildings in the West of the city, however, Jailoobak, Kirpichniy and Jany Jer also show a high quantity of people who may be living in poor quality houses.

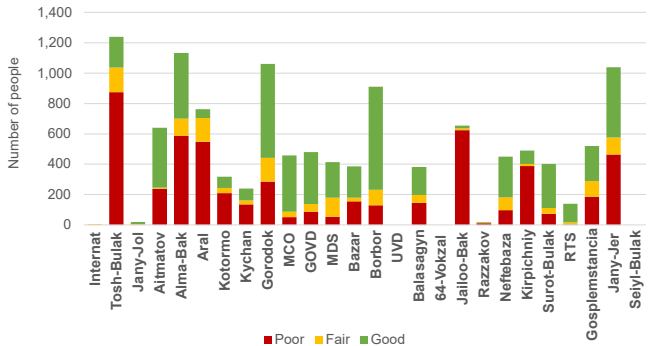
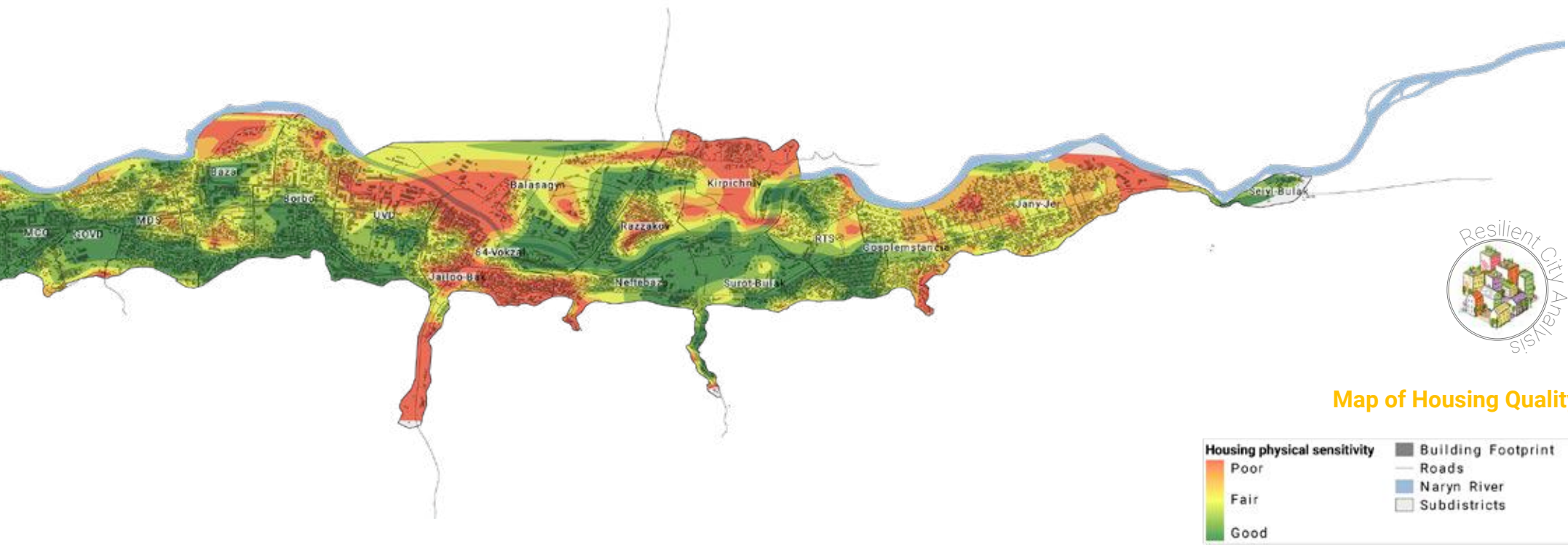
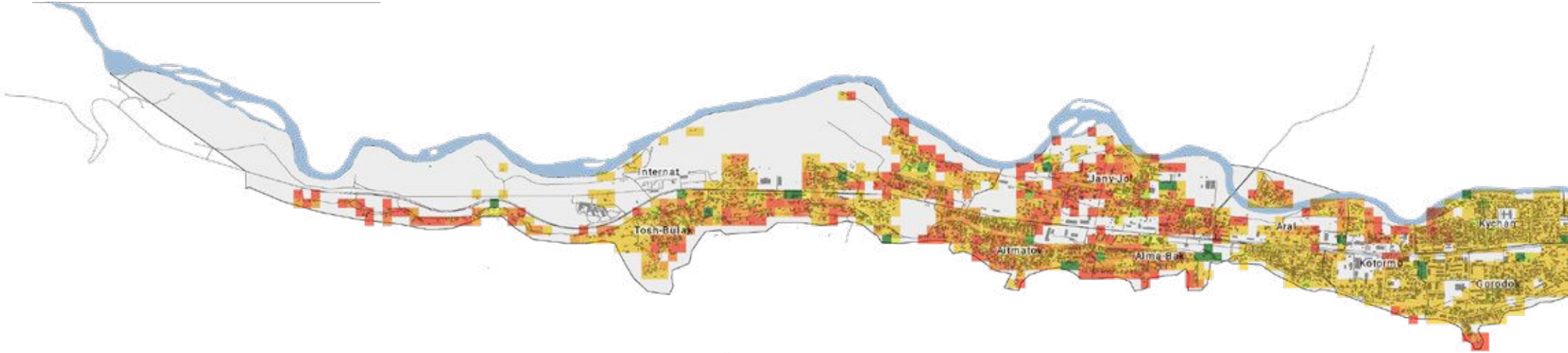


Figure 84. Number of people exposed to any hazard that also live within a building that is considered 'poor', 'fair' or 'good' quality



Map of Housing Quality





viii. Income Sensitivity

The survey also included a series of questions relating to household income. This analysis highlights those buildings where households with lower financial security may be. It provides evidence to show that, similar to building quality, buildings in the West of the city may have a more challenging financial situation, which may increase their vulnerability to hazards. In relation to road infrastructure at risk, the West of the city is also more vulnerable, meaning that accessibility may be harder for those living in the West of the city to employment, education or health services.<sup>5</sup>

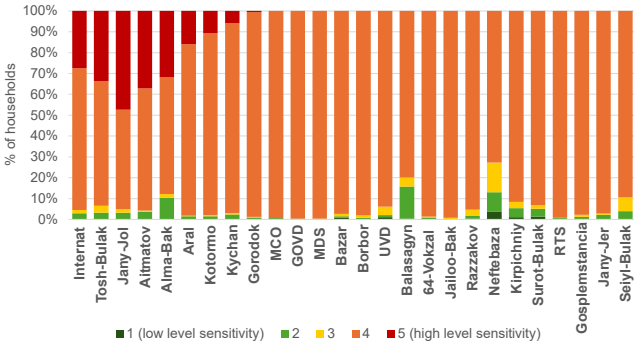
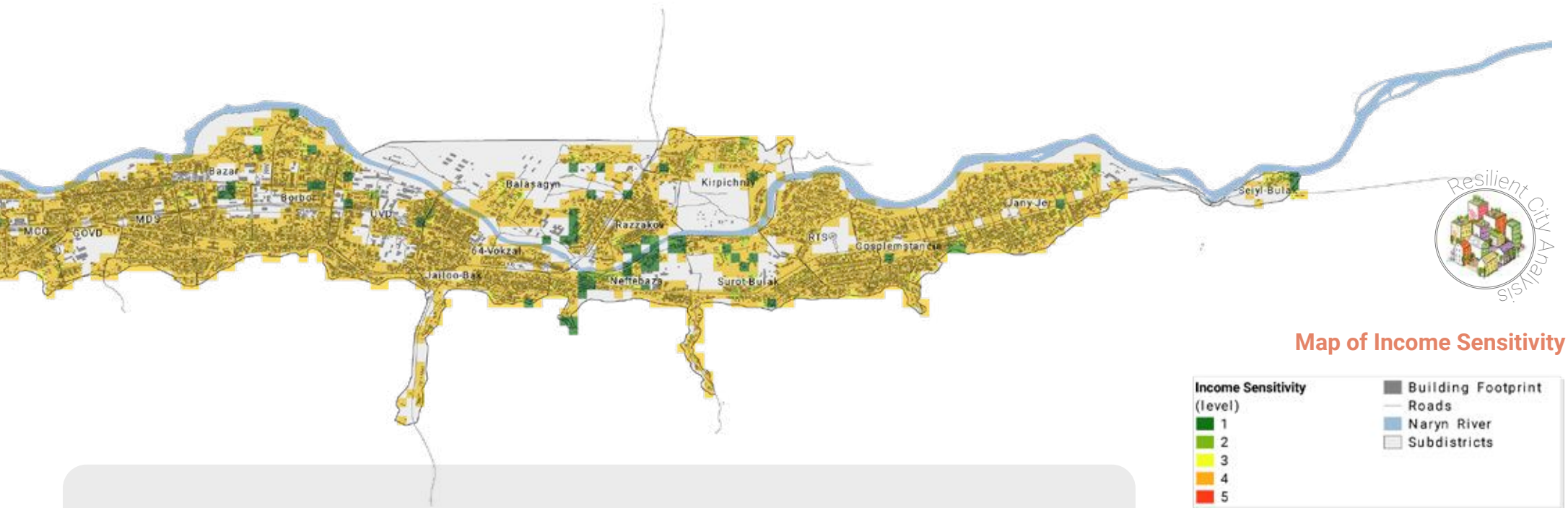


Figure 85. Income sensitivity (based on household insurance) as a proportion (%) of the total households within each sub district

An example of how these challenges compound is by

<sup>5</sup> It is important to note that not all households were surveyed. Therefore, this analysis provides an indication of the distribution of household income but there may be ‘outliers’ that are not accounted for. Additional work is planned to investigate further informal settlements or other indicators of income sensitivity.



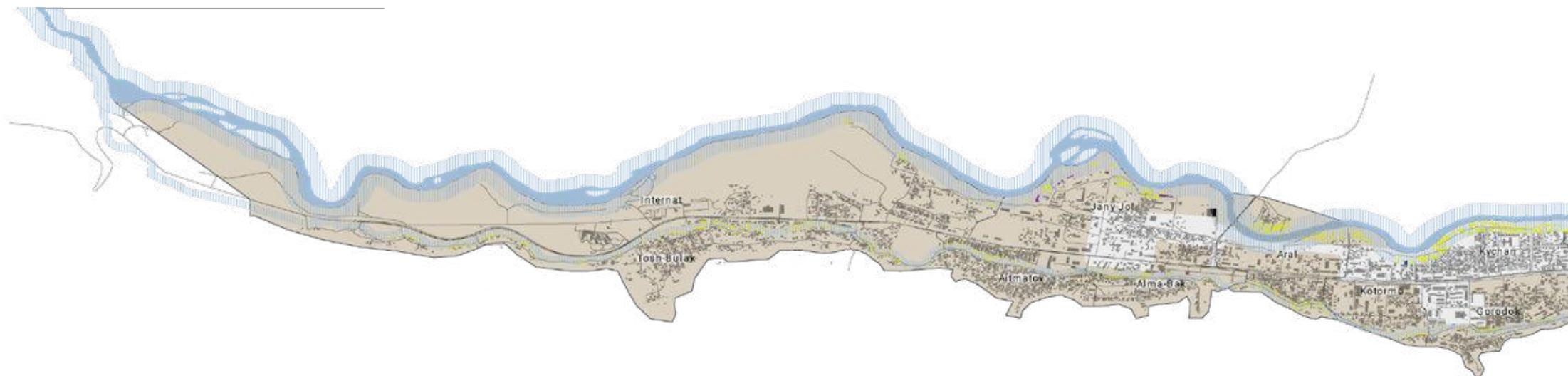
Map of Income Sensitivity

looking at the large amount of sewerage and water network that is at risk in Alma Bak from mudflow. Only 25 percent of the buildings in this sub-district have access to the city's sewerage network.

Furthermore, 70 percent of households have only 1 form of household insurance, and 12 percent have no insurance. In addition, 70 percent of the total population live within an area that is identified as a hazard zone (from mudflow and partly from erosion).

Compounding challenges provide evidence to prioritise areas of the city that are at risk, and highlight where one development intervention can resolve a number of linked challenges. Those

households that do not have access to the city's sewerage network may use septic tanks or pits which, exacerbated by mudflow and flooding, can quickly pollute the water table or natural sources of water for irrigation or drinking. 10 percent of the total population in Tosh-Bulak, Alma Bak, Jany Jer, just over 8 percent of the population in Gorodok, and just under 8 percent in Aral are exposed to mudflow and flooding that do not have connectivity to the sewerage network. Although the IHA already undertakes a hazard assessment at the sub-district level, the granularity provided through spatialising datasets, helps to provide a more detailed indication of areas impacted.



## ix. Structures in Water Protection Zones

Water protection zones are crucial protection measures for protection of ecological assets and hazard risks. Defined by the related regulations Naryn River has a 100 meter protection zone, and the Naryn Big Canal has a 50 metre protection zone.<sup>5</sup>

As these zones cross all sub-districts, 2,916 buildings are present within the zones. 94 per cent of these buildings are residential and inhabits a population of 9,913. Overall 70 industrial buildings are within these protections zones. Although the specific use of these industrial buildings are unknown, there may be challenges associated with pollutants from these industrial activities.

<sup>5</sup> 1995 Regulations on Water Protection Zones and Strips of Water Bodies in the Kyrgyz Republic.

Examination of the distribution of population within the sub-districts show that 73 per cent of people in Seiyi-Bulak, 70 per cent of 64-Vokzal and 58 per cent of Neftebaza live within the water protection zones.

The areas that lack sewerage access in Naryn also poses risks to the protection of the water bodies as 2,074 buildings (71per cent ) lack sewerage access in these areas.

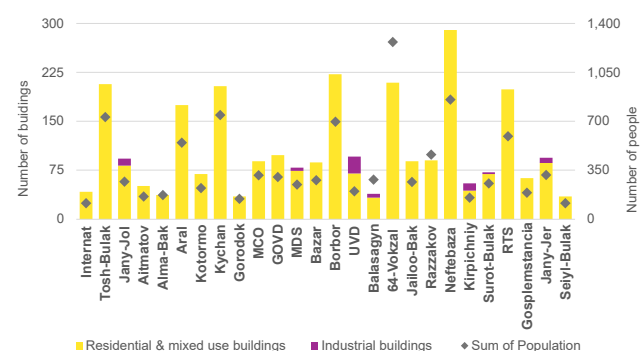
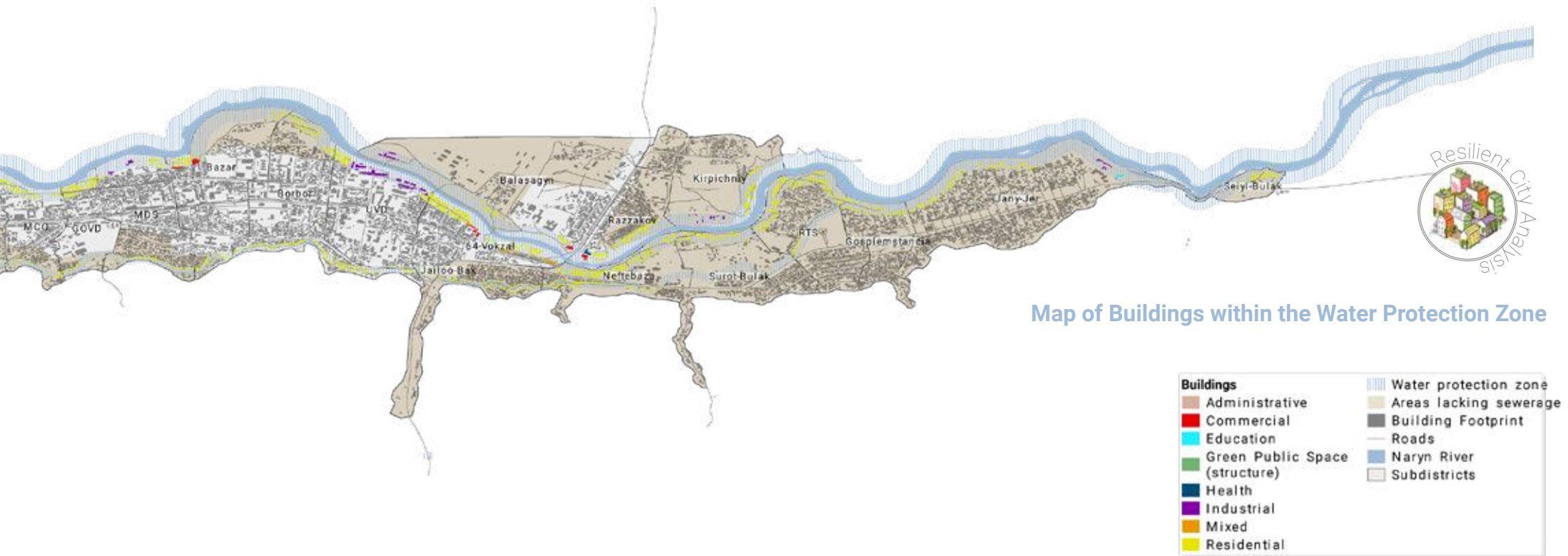


Figure 86. Buildings and population within each sub-district within the water protection zone



Map of Buildings within the Water Protection Zone



## 7. Strategic Issues

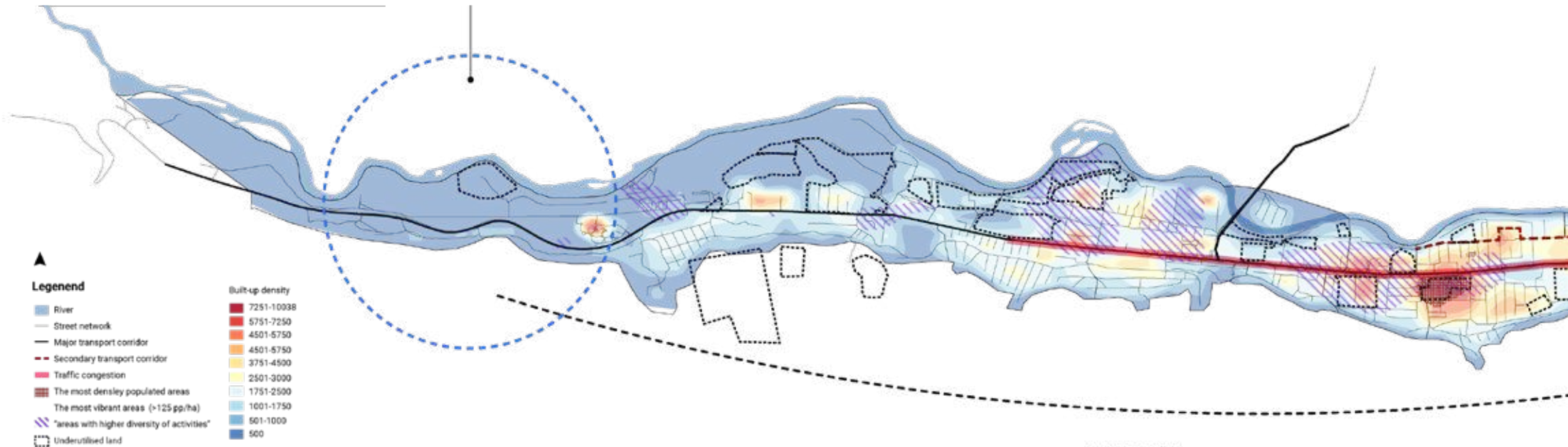
The findings of this report are derived from a thorough thematic assessment covering key areas such as land use, population, natural hazards, and public and green open spaces. By integrating these findings into broader strategic issues, the report offers comprehensive, interconnected responses that address all dimensions of urban resilience. Rather than tackling isolated problems within individual sectors (e.g. transport infrastructure, energy), grouping issues across sectors helps to identify the underlying root causes. This ensures a holistic approach to tackling urban challenges with strategic solutions that are cross-sectoral and integrated, rather than fragmented or siloed. These strategic issues represent a network of interconnected challenges which will be systematically addressed in the subsequent stages of the project, including in the Strategic Spatial Plan and the Capital Investment Plan.











## Monocentric Urban Development

### Spatial Dimension

Based on the assessment of indicators related to the city's five objectives, it is evident that the urban structure of Naryn can be characterized as monocentric, with a higher diversity and volume of land uses concentrated in the city centre, particularly in Bazar, Borbor, and UVD, especially along the main road. The population of Naryn is uneven and is generally consolidated in the city centre, with pockets of high population along the main axis and in the areas of Tosh Bulak and Jany Jer. Considering the city's imbalanced population distribution and its linear layout, the consequences of a monocentric urban organisation manifests in various interrelated challenges.

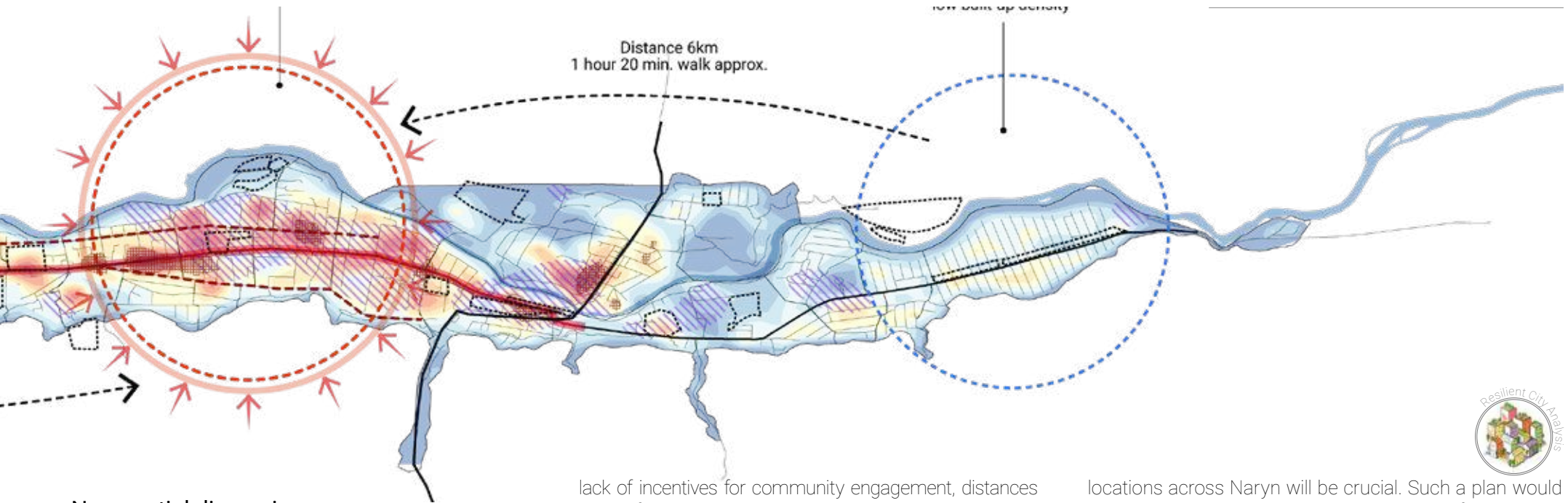
Commuting along the single axis to the major commercial centre in Bazaar, constituting 37.17% of the total commercial land use, leads to concentrated traffic congestion. This is especially evident in areas characterised by limited and undeveloped alternative

transportation infrastructure, as demonstrated by heavy traffic flow on the secondary route north of the city centre and through the central marketplace. Unregulated parking, lack of alternative pedestrian movement, and access roads for discharge intensify pressures along the main corridor, contributing to higher levels of traffic emissions and, consequently, air pollution, affecting both air quality and public health.

The monocentric development coupled with a linear structure of Naryn leads to inefficient and imbalanced land use, resulting in increased infrastructure costs and challenges in providing services to areas separated from the centre. Residents at the ends of the linear city experience challenges in accessing services and amenities concentrated in the central areas. Conversely, residents from the centre find it challenging to access amenities located at the opposite ends, such as the University of Central Asia, due to lack of connectivity and well-functioning public transport and absence of a compact urban pattern that drives the consolidation of urban development and promotes walking and cycling.

Most of the urban layout is represented by monofunctional residential development, constituting nearly 63% of the total built-up area. Coupled with a lack of urban typology that promotes mixed-use development, the current character of the built environment at the edges does not provide a vibrant cityscape and an enabling environment for establishing secondary nodes or centralities that would enhance economic, cultural activities, and accessibility to services.

While the central part of the city appears to be a vibrant and economically active urban core, the general urban morphology is characterized by a fragmented urban pattern with a number of industrial zones, under-utilized or non-functioning brownfield sites within the built-up area. This type of morphology presents unique opportunities for targeted infill development. However, failing to address the character of the urban layout may lead to safety issues due to the presence of abandoned structures and sites, environmental concerns, and social divide.



## Non-spatial dimension

### i. Social

Monocentric development coupled with the lack of connectivity and a lack of mixed-use typology can result in monotonous cityscape, and poor levels of economic activity. This significantly diminishes opportunities for social interactions and creation of vibrant mix of daily life, work and leisure. The challenges are further amplified by the long distances required for the residents of Internat, Tosh-Bulak and Jany-Jer, Seyl-Bulak, Gosplemstancia, RTS to access various services and amenities, exacerbated by traffic congestion collectively influencing the dimensions of urban health and community well-being.

The unequal access to services as a result of the unbalanced urban structure, contributes to social inequalities, creating disparities in healthcare, education, and employment opportunities. The limited integration of the University of Central Asia into community life, marked by limited physical accessibility to university facilities and a

lack of incentives for community engagement, distances Naryn from realizing its potential as a thriving university town.

### ii. Economic

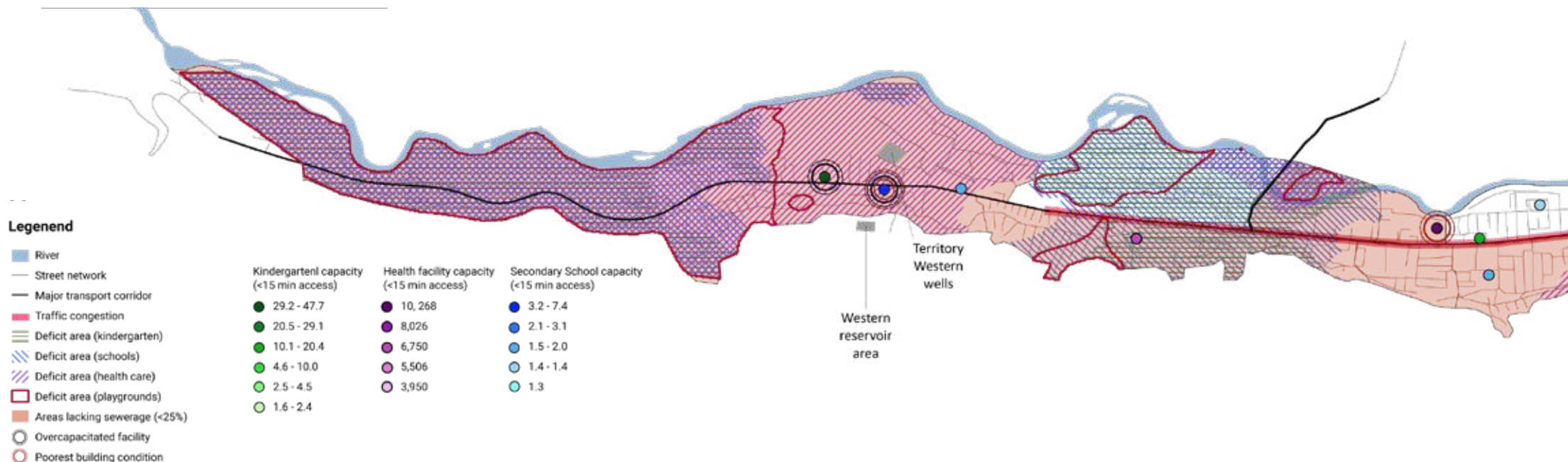
The areas along the central corridor and in close proximity to the city centre may experience higher land costs, potentially pushing out lower-income residents and businesses to the outskirts, which leads to the marginalization of local businesses in other parts of the city. This fosters economic disparities, favouring businesses and residents in the major centre. As emphasised in the spatial component, the absence of secondary nodes, combined with linear structures, poses a significant challenge to urban productivity due to higher costs associated with delivery.

In response to these economic challenges, implementing a strategic plan that leverages local economic development by positioning sectors of high potential —agro-industry, tourism, and the logistics hub, as previously outlined— in strategically varied

locations across Naryn will be crucial. Such a plan would support a more equitable distribution of economic activity, countering the current monocentric urban model. By fostering economic diversification and dispersing commercial growth, this strategy would address the spatial and economic imbalances, facilitating a more balanced and sustainable urban development. It would also diminish the marginalization of peripheral areas, leading to a more cohesive and resilient urban fabric that benefits the entire city and its residents.







## Imbalanced Service Distribution

### Spatial Dimension

The challenge of unequal service provision in Naryn is partially attributed to the monocentric development and linear urban structure. Currently, the concentration of services in the center is a result of a developmental focus in these areas, which are also where the larger infrastructure provisions are located.

Expansion of these networks and infrastructure systems are costly, and require substantial funding, which the local municipal budget is unable to cover. External sources of funding for the implementation of these expansion problems (such as the EBRD project) form part of the City's approach to fill these service gaps. Social services in the city face a similar challenge, where planned expansion of social facilities have not yet been realised due to funding challenges.

As a result, Naryn faces an imbalanced distribution of

social services reflected in the need for residents of some sub-districts to travel long distances, and over capacitated facilities such as schools and kindergartens as well as polyclinic 1, in the city centre.

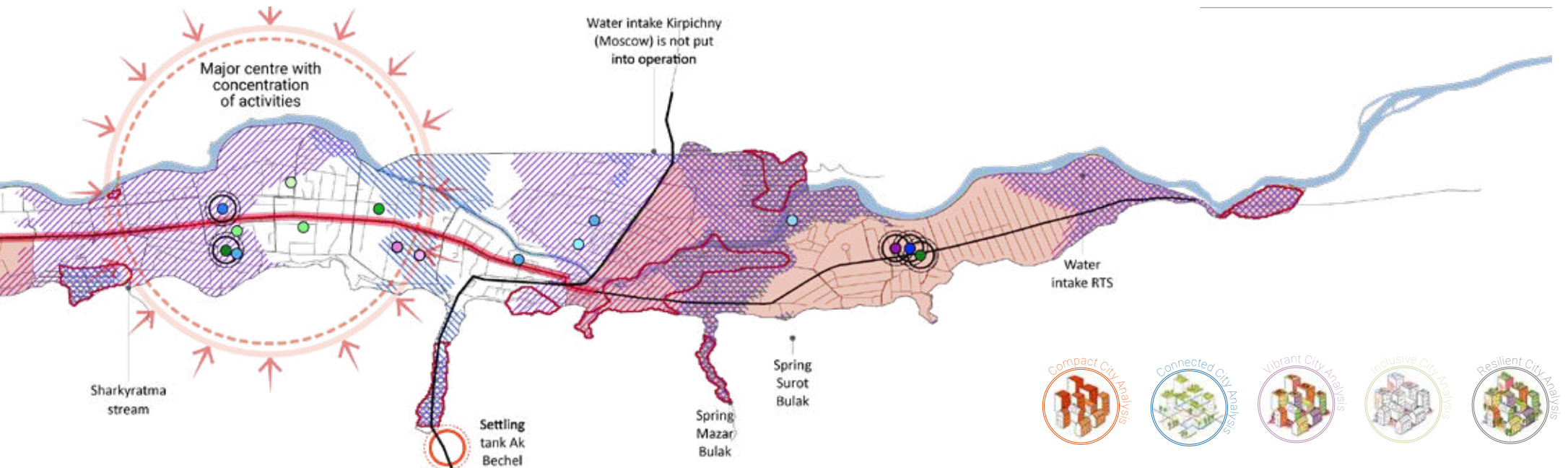
Although kindergartens in Naryn are relatively accessible for most communities, including those in the far East and West, residents in Jany-Jol, Alma Bak, Aral, Tosh Bulak, and Surot Bulak face more than a 20-minute journey to access kindergartens, posing a challenge to neighbourhood liveability.

Similarly, while schools are distributed throughout the city, the conducted study highlighted challenges in ensuring inclusivity in secondary education across Naryn. Some residents, particularly in Jany-Jol, Alma Bak, and Aral, experience deficits in accessibility to schools. Surot Bulak and Kirpichniy also face partial deficits, and residents in Jany Jer and UVD encounter significant travel times, up to 20 minutes, to reach the nearest secondary school. Additionally, the schools in Tosh Bulak and in Gosplemstancia have the worst building conditions.

Playgrounds are crucial for the city's inclusivity and should be easily accessible to all children. Currently, Naryn faces a deficit of playgrounds in Tosh Bulak, MDS, Jany-Jol, Aitmatov, Jalalobak, and Kipichniy. Approximately 10.7% of the total population, including 5807 children, do not have access to a playground within a 10-minute walk.

The spatial distribution of health facilities seems adequate, covering the city's extent, yet qualitative data reveals a significant issue of their inadequacy for optimal healthcare. Tuberculosis (TB) and respiratory illnesses are prevalent, exacerbated by the loss of the TB clinic in 2017 due to an earthquake. The analysis shows poor accessibility to the four functioning polyclinics, with nearly 66 per cent of the entire population (27,299 people) not being able to access healthcare within a 15-minute walking distance. The issue particularly affects MDS, Bazar, Tosh Bulak, Internat, Balasagyn, and Razakov. Even with the renovation of clinic 5, areas like Internat, Tosh Bulak, and the East of the city will still lack access.

The residents of Naryn face inequalities in accessibility to water and sewerage networks. The current water



system is insufficient in terms of quantity, quality, and distribution. The dependency of the population on Ak Bechel in the southernmost part of the city for consistent drinking water, creates a challenge for overall urban resilience and social security due to the necessity of pumping for widespread distribution and the risk of pollution or potential breakdown. The water intake systems are damaged, exacerbating water loss and thus, unsustainable use of water resources. That is aggravated by an inefficiency of irrigation channels and limited operation of the Naryn Canal that results in using drinking water for irrigation purposes.

The sewerage system is under capacitated with a single waste treatment plant capable of servicing only 10,000 people. Approximately 10460 residential buildings lack sewage access due to insufficient infrastructure and funding, predominantly it is noticeable in Jany Jer and higher land in the North of Borbor and Bazaar that may require additional pumping.

Waste disposal faces similar issues, with irregular waste collection, poor-quality containers, and a lack of

access for 30155 people within 200m of their homes, contributing to an unhealthy urban environment. In Jany-Jer, as well as in RTS and MDS do not have access to solid waste disposal.

The drawbacks of the imbalanced linear structure of the city and the need for compactness are also reflected in the full integration of Naryn State University in the city, facilitating social interactions necessary for a vibrant and attractive urban environment, unlike the isolated, campus-based University of Central Asia (UCA), located on the edge of the city. Like the concentration of cultural activities in the central part of Naryn, the State University becomes less accessible for the remote communities.

Although agglomerated activities in one node often supports a tourist economy due to ease of access, there is no integrated spatial approach to tourism. Guest houses, cultural facilities and other activities in Naryn could be more easily promoted through wayfinding and landmarks. Small interventions, such as signposting and identified pedestrian routes through the city, as well as design interventions (planting, pedestrian walkway

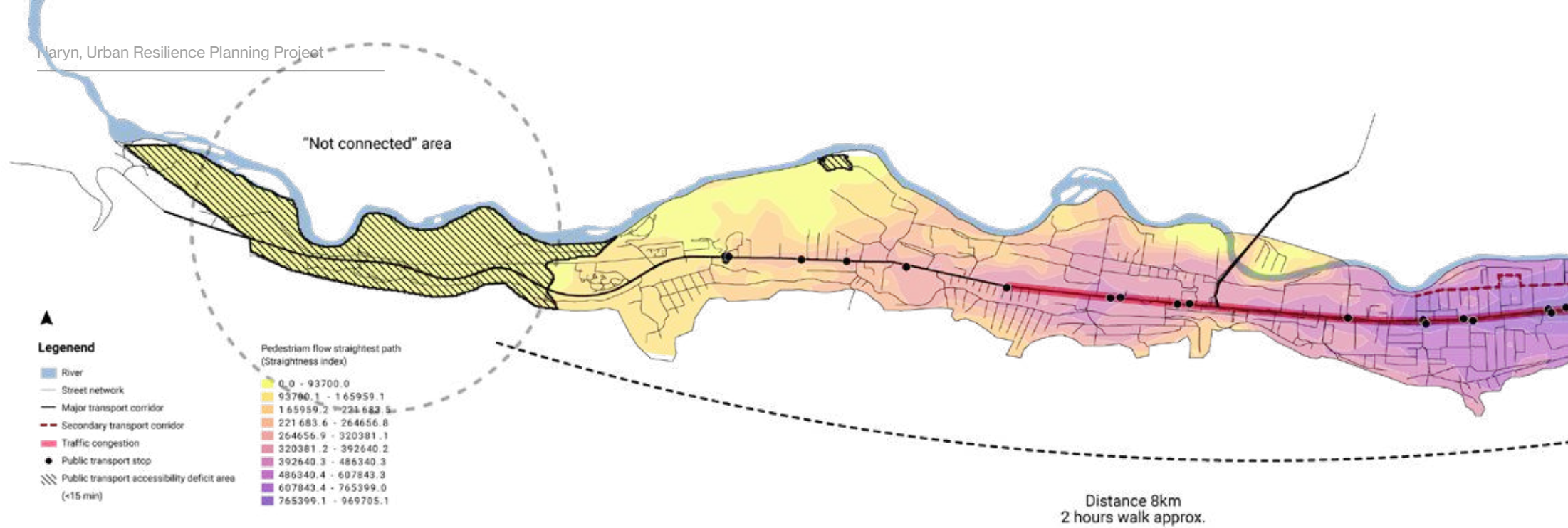
repairs) can support tourism and economic activities related to it.

## Non spatial dimension

### i. Social

Insufficient access to social infrastructure affects women, children and elderly in specific neighbourhoods. Long travel time to kindergartens in Jany-Jol, Alma Bak, Aral, Tosh Bulak, and Surot Bulak negatively impacts social equity, creating disparities in childcare support, and holistically affects disposable, productive time for those that have to travel longer distances to reach services and facilities. Tosh Bulak, MDS and Razakov are highlighted as having the worst accessibility to clinics for senior citizens.

Furthermore, the lack of disability-friendly infrastructure such as ramps, elevators, and other accessible features in buildings and public transport makes it difficult for people with disabilities to access essential services. Without addressing this issue, this oversight in infrastructure planning will further deepen the inequality.

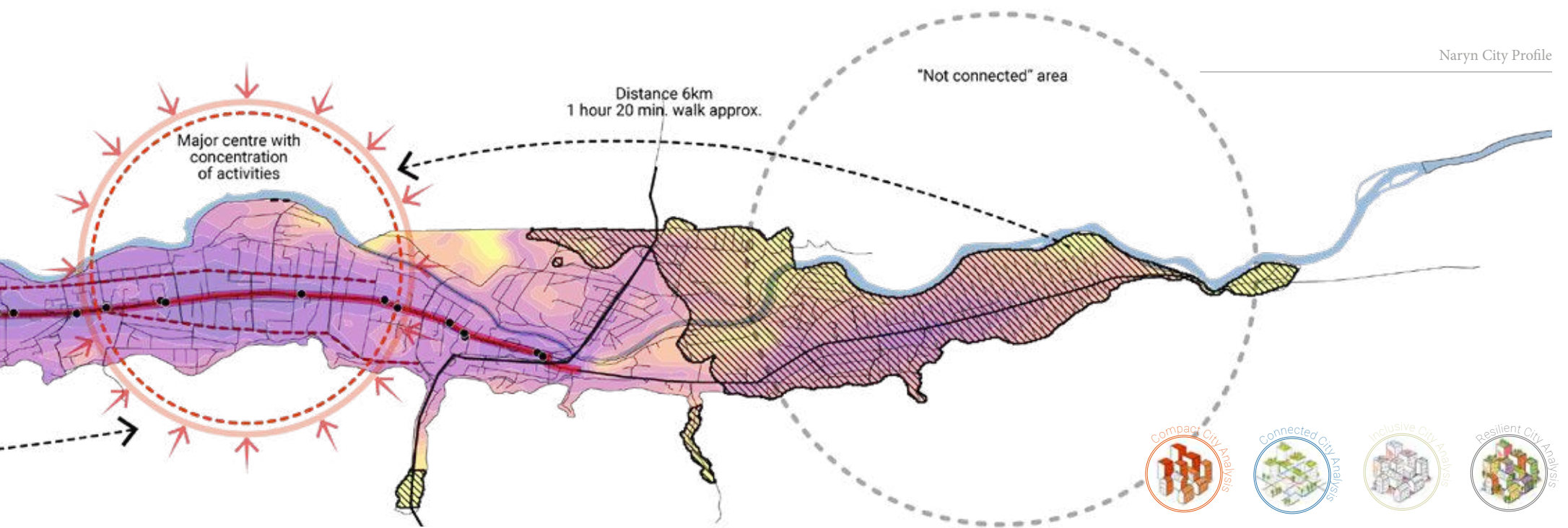


## ii. Economic

Unequal infrastructure development affects both the viability of neighborhoods and the growth of local businesses. Issues like inconsistent water supply and inadequate access to sewerage systems escalate operating costs, presenting considerable barriers for new business and complicating financial planning for the current ones. Furthermore, inadequate infrastructure can limit access to markets and resources, hindering the supply chain and diversification of local economy. This can lead to missed business opportunities, reduced competitiveness, and a slower pace of development.

Moreover, in the context of tourism, poor infrastructure can significantly undermine the potential of a region to attract tourists. Tourist destinations require reliable transportation, sanitation, and safety services to ensure a positive experience for visitors. The absence of these facilities create a considerable barrier in establishing stable tourism-related revenues.





## Insufficient mobility infrastructure and limited mobility patterns

### Spatial Dimension

Naryn experiences insufficient mobility infrastructure that affects the efficient functioning of the entire city. Typical for a monocentric and linear town, there is a heavy dependence on the central transport corridor along Lenin Street, with limited alternative multimodal routes, leading to traffic congestion, increased pollution, and higher accident risks. This issue is particularly evident in the main marketplace area in Bazar, where the absence of parking management, coupled with a high volume of pedestrian traffic, results in a chaotic and unsafe environment.

The secondary route north of the city centre is insufficient and instead of being an alternative parallel artery to offload the traffic flow from Lenin Street, it faces congestion due to unregulated economic activities, lack of parking and the intense pressure from movement of large service vehicles.

A detailed analysis of road density and intersection distribution reveals disparities across sub-districts, with the city centre displaying a relatively higher level of urban permeability in the central part. Lack of additional secondary access roads, pedestrian and cycling routes including bridges over the river contribute to the fragmentation of the city. The issue of efficient urban permeability is significantly exacerbated by the overall quality of roads with only 13 km out of 45 km being in good condition.

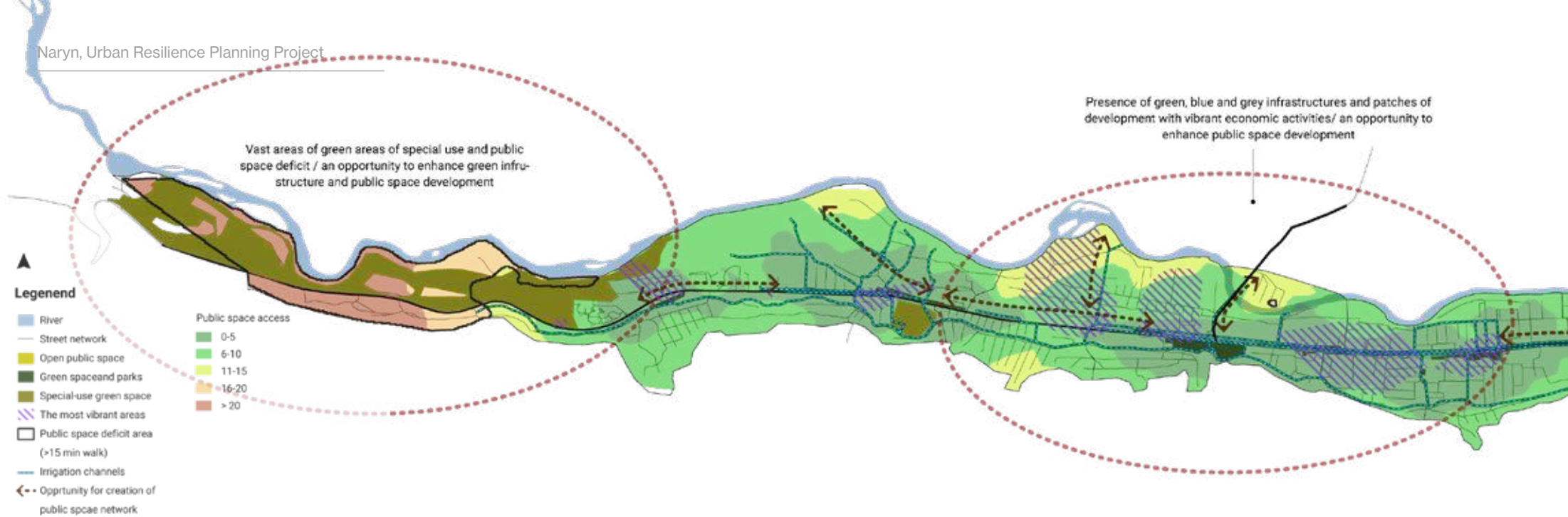
Streets are not considered as proper public spaces which leads to the lack of infrastructure for cycling and pedestrian movements. Moreover, roads in general have poor conditions due to the maintenance issues which impacts the city's connectivity, accessibility to services and affects street safety, especially in the areas with larger concentration of population such as Bazar, Borbo, MDS, GOVD, MSO, Kychan, Gorodok, UVD, Vokzal, Jailoobak. This is particularly evident on the Torugart Road and roundabout, as there is a high population density in this area, and the 'straightest path' analysis highlights this as a very efficient route, likely taken by a high density of people.

However, there is no formal pedestrian pathway on this road. A small bridge between Balasagyn and 64-Vokzal highlights the need for an alternative pedestrian route between these two areas. There is an opportunity to improve the pedestrian pathways on this key route in the city.

While the existing public transport line efficiently serves the main road and densely populated sub-districts, Naryn is still experiencing a gap in public transport service area and last mile connectivity, which affects residents in the very Eastern and Western parts of the city. The lack of last mile connectivity in Seyl-Bulak, Jany-Jer, Gosplemstancia, RTS, Surot Bulak, and Kirpinchniy poses a significant issue for a large number of population, making it challenging to access services in the central and western part of the city. On the eastern side, the lack of connectivity to UCA exacerbates the issue of the University's isolation from the community, contradicting the intentions of a University Town.

Moreover, the electric bus system, currently the primary mode of public transport, is being considered for an upgrade to battery-powered electric buses (e-buses), however, apart from a lacking coverage to the city's peripheries, it does not





impose major constraints in its current functionality.

The riverbank is underutilised in the city-wide mobility flow, highlighting a perception of the river as an obstacle rather than an asset that could enhance overall connectivity. Leveraging the river for better urban structure connectivity could contribute to a more pleasant walking experience, benefiting communities and the development of local economy. This is particularly evident East of the city centre, where there is limited connectivity over the river – it therefore creates a barrier between Balasagyn and the city centre. Improving this connectivity would greatly benefit the community in Balasagyn, and better unify the city's central area with its surrounding neighbourhoods.

Plans to re-establish the Naryn Airport (in the East of the City) will present an opportunity to improve regional and national connections, which will be needed to support the City's tourism vision for economic development.

One additional opportunity is the regional traffic on the Torugart Road. There is currently no interaction between this traffic and the city, however, there is great potential

to encourage long-distance trucks to stop in Naryn through the design of the road network, and provision of economic activities near to this route. At the same time, limited pedestrian crossings over this road, and in general in Naryn, mean that the primary and regional route fragment the city and the mobility of pedestrians throughout. If carefully designed, both improved permeability and engagement with regional traffic can benefit the city.

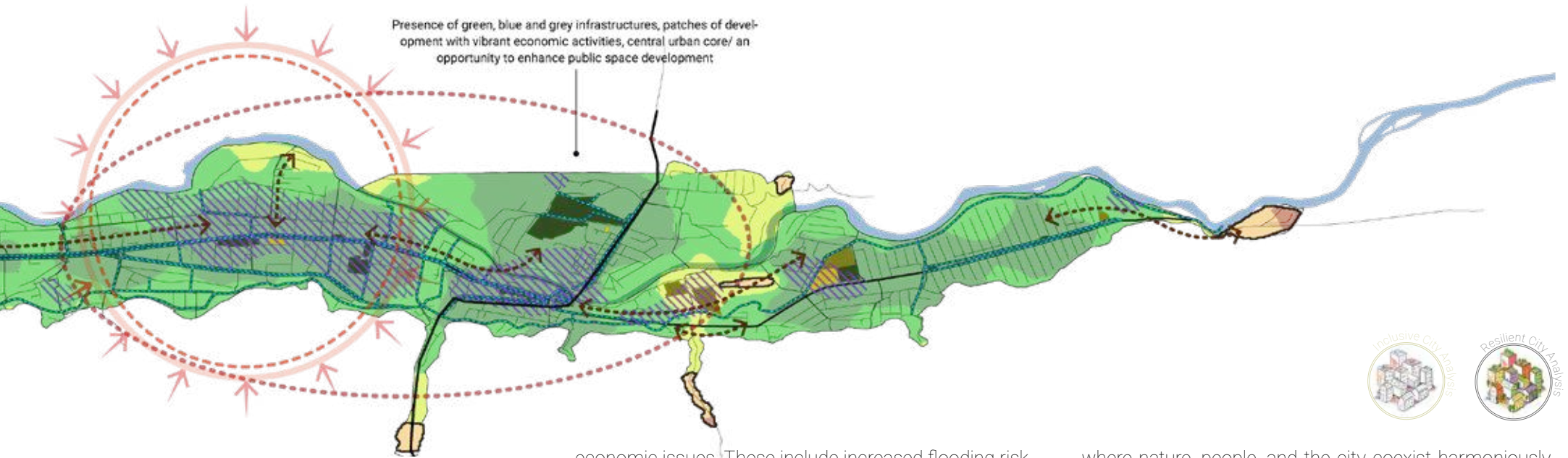
## Non spatial dimension

### i. Social

The current conditions of the road network, coupled with limited access to public transport, pedestrian, and cycling infrastructure, exacerbates the problem of unequal access to services in Naryn. The chaotic and unsafe environments resulting from the intense pressure on the central corridor and unregulated traffic raise concerns, particularly impacting individuals with limited mobility, the elderly, and families with young children who struggle to access essential social services.

### ii. Economic

The gaps in city-wide connectivity affect the supply chains and operational efficiency of local businesses. Additionally, the lack of opportunity for residents to easily commute from areas without last mile connectivity creates challenges for their engagement in economic activities, including widescale utilization of the UCA campus. This may pose challenges to the University Town initiative. Additionally, to maximize the potential of key economic sectors – specifically agro-industry, the logistics hub, and tourism, as outlined in the economic analysis – it is essential to strengthen interconnections between these industries. This would include enhancing rural-urban linkages to support the food industry, bolstering capacity for national distribution and export. Such improvements are vital for the growth and success of these sectors.



## Disintegrated Blue, Green and Grey Infrastructures

### Spatial Dimension

Focusing on the integration of blue, green, and grey infrastructures is essential for promoting resilient and sustainable urban landscapes. Blue infrastructure, which includes rivers, lakes, wetlands, stormwater management and irrigation systems, is integral to the natural water cycle and biodiversity conservation. Green infrastructure, comprising natural and semi-natural areas such as forests, parks, vegetable gardens, and green roofs, improves air and water quality, provides recreational areas, and supports biodiversity. Grey infrastructure, made up of human-made constructions like buildings, roads, and urban utilities, is essential for the overall functioning of cities.

However, the disintegration of these infrastructures can lead to numerous environmental, social, and

economic issues. These include increased flooding risk, water pollution, intensified urban heat island effects, biodiversity loss, inefficient use of resources, and an overall decline in quality of life.

The crucial need for integration is well exemplified in Naryn, where the green infrastructure, specifically forests, plays a dual protective and supportive role. As natural barriers, these forests protect against mudflows and debris that could damage the grey infrastructure, such as buildings and roads. Simultaneously, these forests are instrumental in the city's water management systems. By decelerating the process of snowmelt, they facilitate the gradual absorption of water into the groundwater and springs. This natural process not only prevents potential flooding but also ensures a more stable and replenished supply of drinking water for the city.

The disconnect between these infrastructures manifests in visible issues such as the loss of forest coverage, pollution, and the absence of a cohesive public space network that unites all three networks into a system

where nature, people, and the city coexist harmoniously. This is evident in the pleasant pedestrian movements and the perceived harmonic development that can be achieved through human-scale, vibrant, and walkable urban areas, a clear relationship to the river through well-organized riverfronts, and well-managed water sources, drainage, and irrigation channels. These factors significantly influence residents' perception of the city and its neighborhoods.

The issue of disintegrated networks extends to the appropriate distribution, provision, quality and management of open public spaces. Open public spaces in Naryn are generally fenced due to the risk of land grabbing, which limits accessibility and the efficient use of space and circulation. As mentioned earlier, streets are not currently considered an integral part of the public space network, which is represented by the lack of inclusive infrastructure for people with disabilities, making it challenging for children, women, and the elderly to use the city equitably. Even when walking access to public spaces is available, fences create barriers to free access, contrasting with the idea of 'living with nature'.

Regarding the provision of open green space, the city's green infrastructure, measured in terms of open public space, is below the recommended levels, with only 4.9m<sup>2</sup> per capita, falling short of the suggested benchmark of 9m<sup>2</sup>. This indicates a scarcity of landscaped parks and green spaces.

However, large green areas, for example Jusaiev Park, would be better leveraged through diverse programming (encouraged through park furniture, and shelters to promote activities) to encourage use.

Although general accessibility to public spaces is not a major concern, residents in peripheral areas of Naryn, including east of Internat, Tosh-Bulak, Seiyul-Bulak, and Surot Bulak, require more than a 15-minute walk to reach any public space. This emphasizes disparities in urban connectivity and the isolation of these parts of the city from the dynamic urban core. In addition, street planting is mainly found in the city centre, rather than in residential neighbourhoods adjacent.

Regarding grey infrastructure, the monofunctional, fragmented built environment without semi-private courtyards, lack of developed riverfronts, boulevards, and active frontages, poses challenges in its integration with blue and green infrastructures.

Irrigation channels are often blocked and not maintained, exacerbating flooding rather than enabling more efficient use of flood water for irrigation. The irrigation network requires not only rehabilitation and reconstruction but also community engagement and a maintenance plan to ensure long-term sustainability. Once redesigned, the water irrigation network can contribute to creating a safe circulation network in synergy with the system of streets and open public spaces, considering that the

channels already generally separate car and pedestrian movements. Moreover, irrigation channels may support biodiversity restoration by attracting species of birds, insects, and other fauna.

## Non Spatial Dimension

### i. Social

The disintegration of green, blue, and grey infrastructures in urban settings goes beyond mere environmental and aesthetic concerns. It deeply impacts the social dimension, influencing public health, economic stability and community cohesion. Green spaces such as parks and gardens, alongside rivers and lakes, are vital for the mental and physical health of residents. Their absence can lead to increased stress levels and a general decline in well-being among the urban population. The availability of clean, safe, and well-maintained public spaces directly correlates with an improved quality of life.

The resilience of a city against environmental challenges, such as heatwaves, flooding, and pollution, can be significantly improved by well-integrated green, blue, and grey infrastructures. A lack of integration among these leaves communities, especially the socioeconomically disadvantaged, more vulnerable to environmental hazards and less equipped to recover from them.

### ii. Economic

Proper integration of green, blue, and grey infrastructures can lead to more efficient urban systems and cost savings. For example, natural stormwater management systems (a component of blue infrastructure) can reduce the need for expensive drainage systems, mitigate

flood damage, and lower long-term maintenance costs. In addition, Green and blue spaces are fundamental to tourism and recreation industries. Disconnected or poorly maintained natural spaces can lead to a decline in tourism, affecting businesses reliant on tourist spending, such as hotels, restaurants, etc.

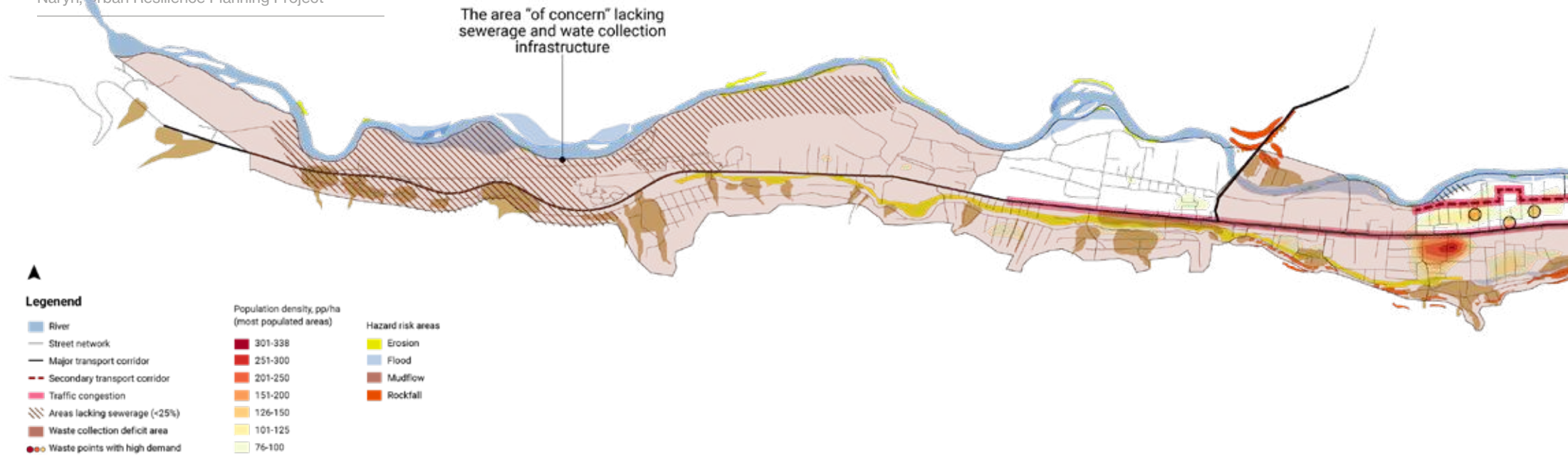
A well-connected system of public spaces that is accessible and opened to public is crucial for fostering a dynamic local economy. Its absence can lead to hindered tourism dynamics and recreation sectors, increased healthcare costs, lowered productivity, affecting small businesses, reduced urban resilience, and inefficient use of resources, ultimately impacting the long-term economic sustainability and prosperity of urban areas.

The case of the Botanical Garden exemplifies the negative impact of restricted public space access. Currently, its closure represents a missed opportunity in leveraging natural assets for economic and social development. However, once reopened to the public, the Botanical Garden has the potential to attract visitors and tourists, supporting the local economy and enriching the city's identity. This transformation would not only underscore the value of accessible public spaces but also highlight their role in economic landscape of Naryn.









## Environmental Degradation and Pollution

### Spatial Dimension

The environmental degradation caused by the lack of maintenance of infrastructure creates additional risks and threats for the city, exacerbating its vulnerability to natural hazards.

The city's heavy reliance on brown coal obtained from a nearby mine as its main energy source is the most alarming issue for Naryn's resilience. The predominant use of fossil-based fuels, particularly brown coal, has substantial consequences for air quality, posing serious threats to the health and well-being of the residents.

The river is affected by siltation that must be addressed in order to integrate the river into the urban environment. The potential expansion of the floodplain and riverbed because of the changing weather conditions can

potentially lead to water pollution. Additionally, the sewage treatment plant, located adjacent to the river, is deteriorating and in disrepair, further increasing the pollution of the river via leaks.

Poor conditions of the irrigation channels and road network create threats for the local environment. Uneven ground height of the road surface without an adequate drainage system exacerbates mud and debris flow, leading to substantial damage of adjacent buildings and infrastructure. Similarly, inefficient irrigation systems that overlap with the road network cause floods due to eventual blockages of the channels.

Solid waste, particularly plastic, construction, and glass, is dumped in landfills without separation, increasing environmental toxicity. Lack of waste treatment facilities, a limited number of waste collection points, and a lack of a sustainable waste management strategy exacerbate the ongoing environmental degradation.

The deforestation and the overall degradation of the natural green spaces exacerbate all the natural risk and

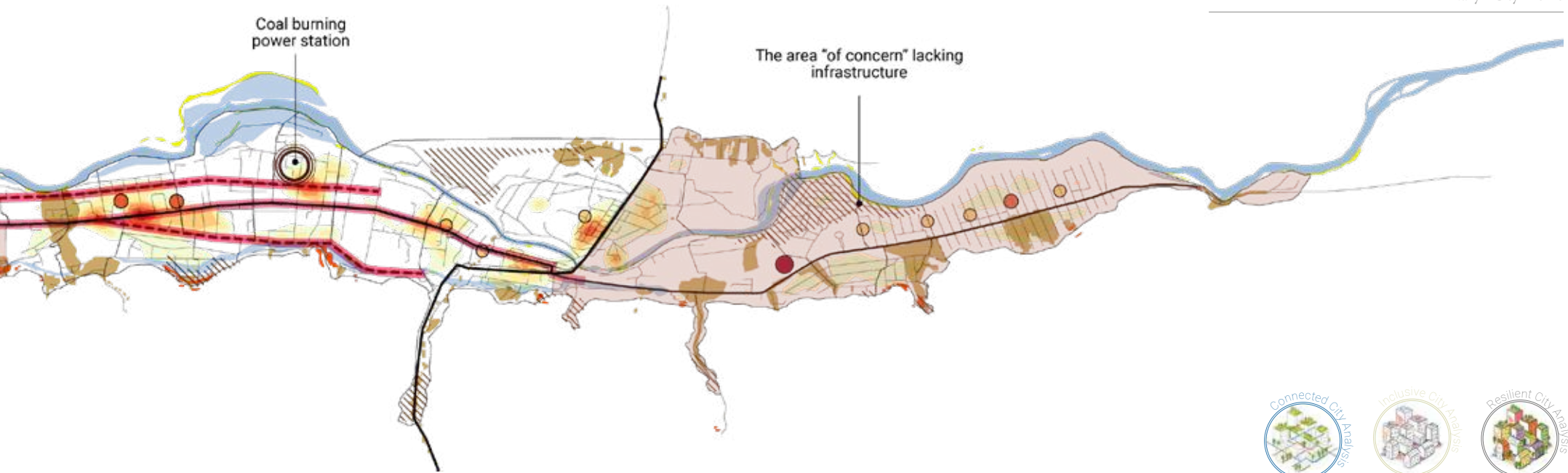
hazards, by reducing the absorbing capacity of the city and diminishing natural barriers that prevent mudflows and debris. The lack of natural forest that serves as a carbon sink and heavy reliance on fossil fuels contribute to the increase in carbon dioxide (CO<sub>2</sub>), exacerbating the effects of climate change and posing health risks.

These challenges greatly impact Naryn's ability to promote tourism and to grow sustainably. Fundamental challenges highlighted here can pose a barrier to the city's visions, such as University Town, Touristic and industrial centre.

### Non spatial dimension

#### i. Social

The cumulative effect of these environmental challenges on the social dimension is profound, impacting the health, safety, and overall quality of life for the residents of Naryn. Prolonged exposure to polluted air can have adverse effects on lung health and overall respiratory well-being. Poor living conditions, degrading environment, exposure



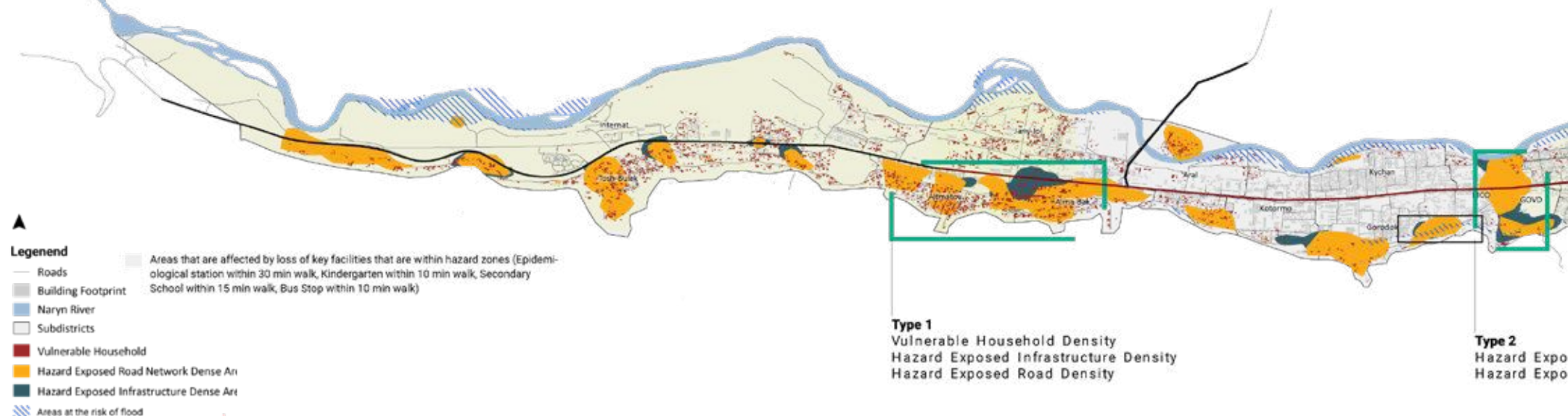
to pollution including noise pollution, and natural hazards have adverse impacts on mental health. Additionally, if these vulnerabilities are most severe where poorer communities are located, it poses a challenge for social equity.

## ii. Economic

The environmental challenges in Naryn, particularly the poor maintenance of infrastructure and unsustainable practices, escalate maintenance costs and contribute to financial inefficiencies and unanticipated expenses, limiting funding for capital investments and services. T

he heavy reliance on brown coal can result in long-term health-related costs and environmental damage. The lack of a comprehensive waste management strategy and unregulated waste disposal can diminish attractiveness for private investments, affecting the long-term economic viability of Naryn.





## Vulnerability to Disaster Risk and Natural Hazards

### Spatial Dimension

Naryn faces a complex set of hazards such as floods, rockfalls, erosion and mudflows or debris flow. As the levels of hazard exposure and disaster risk varies spatially in Naryn, mudflow is the predominant one in terms of spatial area that it impacts. Among all the 82 ravines only a few have mudflow traps to capture and channel the mudflow into the canal.

Besides mudflow, flooding impacts the city generally along the river and there is erosion observed along the city canal, mainly in the west of the city. As by total length and count, the highest amount of hazard exposed infrastructure (road, water, irrigation, electricity) is in Tosh Bulak, the southern parts of the city inhabit most of the hazard exposed infrastructure.

There is a general increase in poor quality buildings in the West of the city, as well as in Jailoobak, Kirpichniy and Jany-Jer. 10% of the total population in Tosh-Bulak, Alma Bak, Jany-Jer, just over 8% of the population in Gorodok, and just under 8% in Aral are exposed to mudflow and flooding that do not have connectivity to the sewerage network and pose significant environmental and public health risks in case of damaging the septic systems by floods which will lead to contamination of water sources, including groundwater and surface water, with harmful pathogens and pollutants present in sewage.

Generally, local housing conditions, often lacking proper insulation, expose residents to harsh weather conditions, leading to increased vulnerability to health issues exacerbated by air pollution.

Naryn is situated in areas prone to seismic activity or earthquakes which requires a holistic approach to the design of the built environment. Currently there are no building codes and standards aimed at reducing vulnerability of construction to earthquakes and there is a degree of uncertainty if the current construction

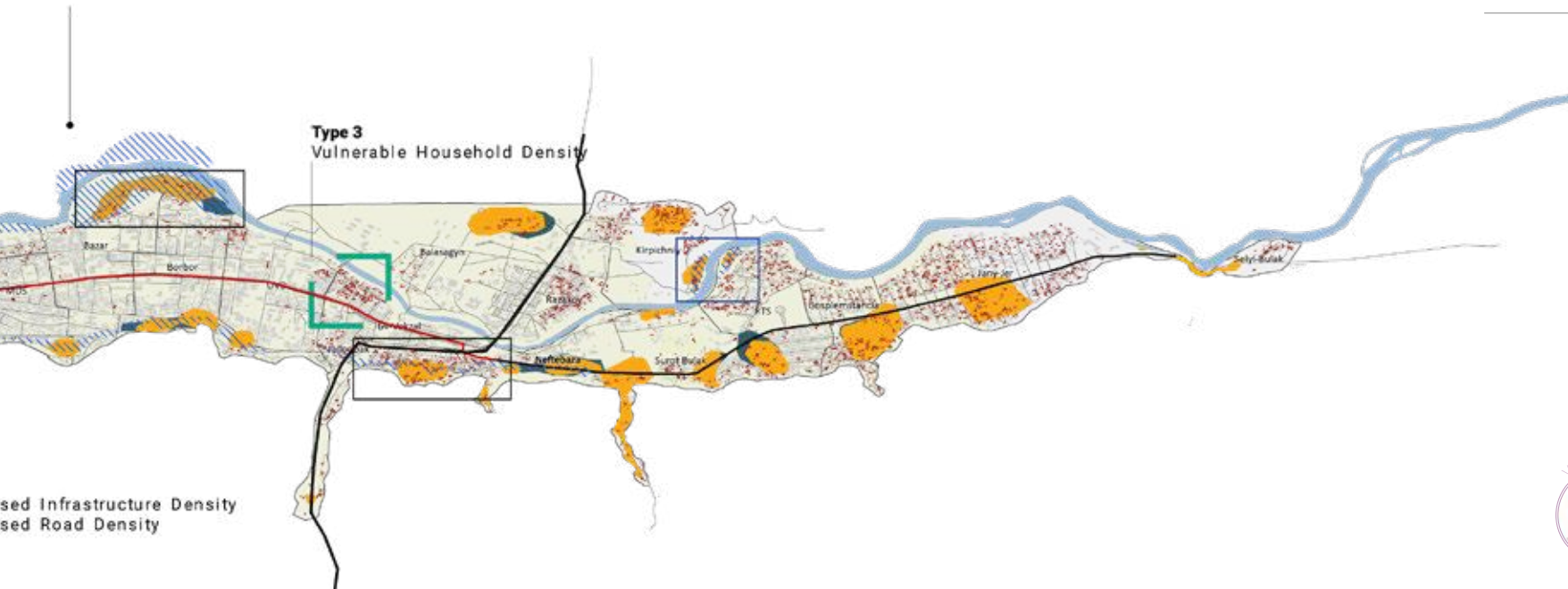
techniques/practices and materials consider seismic resistance and the character of local soil.

To effectively address these challenges, it's crucial to integrate planning strategies that combine nature-based solutions, such as tree planting and terracing, with sustainable energy provision. This approach not only helps reduce the impact of natural hazards but also prevents the loss of forest cover, commonly used by households for heating.

In understanding the risk landscape, it's important to consider household vulnerability as a critical layer. Various factors, including accessibility to services, the impact of hazards on accessibility, the population exposed to hazards, the income sensitivity level of the household, the physical sensitivity of housing, and the state of access to sewerage and water networks, contribute to a general household's vulnerability.

The synthesis of hazard exposure and vulnerability reveals in Naryn reveals three distinct characteristics:

at risk (no sewerage  
prone to flood)



1. Areas that inhabit the densities of vulnerable households, hazard exposed infrastructure and hazard exposed road network
2. Areas that inhabit the densities of hazard exposed infrastructure and hazard exposed road network
3. Areas that inhabit the density of vulnerable households.

While Types 1 and 2 align with hazard zones, Type 3 provides critical insights following the human-centered, Integrated Spatial Planning approach that helps to address non-spatial dimensions of vulnerability in addition to physical dimensions.

## Non spatial dimension

### i. Social

The absence of effective hazard assessment mechanisms, along with the emergency preparedness and response plans, presents a critical issue for the

resilience of the entire city and the safety of its people in emergency situations. This is exacerbated by a general lack of awareness about potential hazards and appropriate response measures. However, there are several key facilities within the city, such as schools, the fire station, and university buildings, that are strategically located outside of known hazard zones. These facilities are not only of good quality but also crucial in both mitigating the impact of natural hazards and in the recovery process. Their strategic locations make them ideal as safe havens and operational bases during emergencies, playing a critical role in ensuring a quicker, more efficient recovery post-disaster.

### ii. Economic

The lack of building insulation contributes to higher energy consumption and costs, putting financial strain on households, impacting low-income households.

The risk of hazards, lack of resilient infrastructure and effective hazard mitigation imposes a significant burden on infrastructure and maintenance costs. After a hazard

event, the need for extensive repairs may significantly impact local budgets, requiring money to be diverted from services or capital investments. Potential disruptions of critical services and infrastructure may affect functionality of the city, impacting businesses and the well-being of residents. This may additionally impact the city budget, as approximately 10% of city revenue comes from non-tax fees and payment for services. If physical assets are unusable due to emergencies, residents may refuse to pay service and rental fees, reducing city income.







### Legend

- River
- Street network
- Major transport corridor
- Agrarian college
- Medical college
- Pedagogical college
- Professional liceum
- Public transport accessibility deficit area (<15 min)

### Professional Education Facility Service Area (in minutes)

- 0-5
- 6-10
- 11-15
- 16-20
- 20 +

## Limited Livelihood Opportunities

### Spatial Dimension

The spatial distribution of livelihood opportunities is a crucial factor in shaping the economic landscape and determining the prosperity of communities. The scarcity of accessible and diverse livelihood options in specific remote geographic areas poses significant challenges, impacting residents' ability to secure employment and achieve economic well-being. One critical spatial determinant contributing to the limited availability of livelihood opportunities is the inequitable distribution of economic activities. In Naryn, there is a significant concentration of industries and services in the central part of the city, leaving other areas with limited access to employment opportunities. In addition, professional education facilities are mainly located in the city center, with an agrarian college situated in Aitmatov. This spatial imbalance has far-reaching consequences, affecting the economic landscape and exacerbating disparities among different neighborhoods.

The spatial imbalance is a result of inadequate infrastructure, geographical positioning, and the current development pattern represented by a single-centered linear structure. However, the geographic location and urban pattern of Naryn provide unique opportunities for strategic interventions in both rural and urban settings. Strategic interventions could encompass targeted infrastructure improvements, including transportation networks and connectivity, to facilitate the flow of economic activities to currently underserved areas. Moreover, fostering economic diversification in different parts of the city, leveraging the presence of UCA at the western edge, can contribute to a more equitable distribution of employment opportunities.

In rural settings surrounding Naryn, initiatives to enhance access to markets, promote sustainable agriculture, and support local enterprises can further contribute to a balanced spatial distribution of livelihood options. The urban settings of Naryn will benefit from urban regeneration and targeted infill development that will transform the monofunctional fragmented urban pattern into mixed-use, human-scale development. This

transformation will facilitate the generation of business opportunities by providing suitable and attractive spaces for entrepreneurs.

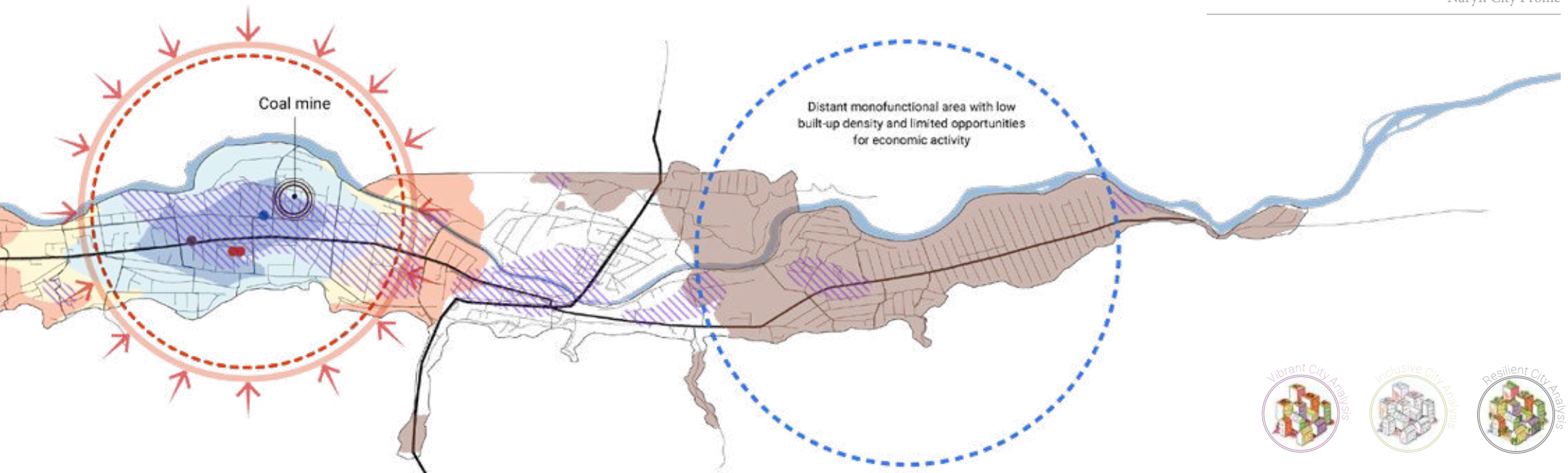
### Non spatial dimension

#### i. Social

Lack of accessibility to professional education restricts communities, especially youth, from acquiring the necessary skills and knowledge required in specific industries or professions. This limitation in skill development limits the participation of people in local economy and creates a risk of out migration. Lack of accessibility to professional education may exacerbate existing social inequalities, affecting the overall community cohesion.

#### ii. Economic

Low levels of pedestrian movements and social interactions as a result monofunctional built environments and poor street design limits the opportunities to create



a vibrant environment attractive for local businesses. Poor quality of the environment and lack of accessibility to key services limits the ability to leverage Naryn's tourism potential by attracting private and international investments to open hotels, restaurants etc.

Despite the city's agrarian surroundings, the current model of food production is unsustainable due to the lack of a local processing industry. This deficiency in local processing not only contributes to the unsustainability of the supply chain, but also negatively impacts the surrounding rural areas. Additionally, the lack of local processing capacity contributes to low economic resilience, making the city and its surroundings vulnerable to external shocks that could decrease food availability and, in turn, reduce productivity. This improvement in the food processing industry is expected to enhance economic prospects and livelihood opportunities for both the city and its rural surroundings by strengthening the rural-urban linkages.

## 8. Conclusion

The challenges and opportunities outlined in this report are a starting point to understand the city, and completes the first stage of UN-Habitat's engagement with AKDN within the Naryn Urban Resilience Programme, the 'Understanding' stage.

A full package of evidence (raw data and data analysis models), collected and processed through various analyses will be provided alongside this report. This way, not only the outcomes and findings from the analysis can be developed into strategic plans, but also the raw data can be used as a basis to continue to develop and adapt a city-wide database.

The next steps for the UN-Habitat and AKDN team, the 'Planning' stage, is to continue to collect data, validate findings with local officials and sector specialists and to develop spatial strategies, legislative and financial and economic recommendations, based on the findings. Community engagement sessions will feed in additional data and validation, as well as inform strategic visioning and development priorities for Naryn.

Finally, during the 'Transforming' stage, these recommendations will be translated into a list of projects, which will then be prioritised and lodged as a Capital Investment Plan for Naryn.

UN-Habitat thanks the numerous stakeholders who have been involved in this first stage of the project.

Resilient City

Vibrant City

Inclusive City

Connected City

Compact City

### Monocentric Urban Development

1. Traffic concentration on main axis and secondary route
2. Lack of mixed-use typology across the city
3. Monocentric structure and lack of secondary nodes, infill and targeted development
4. Fragmented morphology due to under-utilised land, industrial zones in central areas, brownfield sites
5. Disparity in access to services & long walking distance for east and west neighbourhoods
6. Limited integration of UCA (spatial and non-spatial)

### Limited Livelihood Opportunities

1. Lacking equitable distribution of economic activities
2. Lacking government support of private and local enterprise

## Imbalanced Service Distribution

1. Lack of access (high distance) to key services (for example 66 per cent of the entire population are not able to access a general health clinic within a 15-minute walking distance; Jany-Jol, Alma Bak, Aral, Tosh Bulak, and Surot Bulak have poor access to a kindergarten; 10.7% of the population can't access a playground within 15 minutes)
2. Overcapacity of schools (the secondary school in Tosh Bulak and in Gosplemstancia; Kindergartens serving population in MDS and GOVD, Tosh Bulak/Internat, and RTS/Gosplemancia; Clinic 2 followed by Clinic 4 have the worst ratio between the occupancy and demand)
3. Poor quality infrastructure (Tosh Bulak and in Gosplemstancia have the worst building condition of secondary school; Clinic 4 has poor building quality)
4. Distribution (even with the renovation of clinic 5, areas like Internat, Tosh Bulak, and the East of the city will still lack access)
5. Water is insufficient in terms of quantity, quality, and distribution. There is a reliance on one main source, with lacking irrigation channels and non-functioning canal. Connections are lacking and can improve service distribution.
6. Sewerage network is undercapacity. Areas like Jany Jer and higher land in the North of Borbor and Bazaar require additional pumping.
7. Waste disposal units are insufficient (quantity) and poorly designed causing poor urban environment and pollution of natural resources
8. Lack of tourism strategy to leverage existing tourist activity and infrastructure (guest houses etc).
9. Lacking disability infrastructure

## Insufficient Mobility Infrastructure & High Car-Dependency

1. Poor traffic management in the city centre including in the market place in Bazar
2. Limited permeability away from the city centre
3. River is not used as an opportunity for connectivity - lacking bridges
4. Poor quality roads (13 km out of 45km)
5. Lacking pedestrian and cycling routes and 'streets as public spaces' away from city centre - predominantly in high population mobility flow areas such as Torugart Road and roundabout (highlighted by pedestrian bridge)
6. Lack of last mile connectivity, mainly in Seyl-Bulak, Jany-Jer, Gosplemstancia, RTS, Surot Bulak, and Kirpinchniy (mainly due to limited extension of bus network)
7. No engagement with regional traffic on Torugart road (no infrastructure), meaning both poorer permeability (no pedestrian crossings) and economic incentives not leveraged.
8. Lacking rural-urban linkages or interactions between key industries



## Disintegrated Blue, Green and Grey Infrastructures

1. Disintegrated public space network
2. Limited access to existing green spaces, including lack of circulation due to fencing design and also distribution of parks and time to access (which is mainly experienced in Internat, Tosh-Bulak, Seiyil-Bulak, and Surot Bulak)
3. Fragmented areas, lacking semi-private spaces, riverfront, boulevards or active frontages
4. Irrigation channels are blocked and not maintained - maintenance plan is lacking and community engagement and channel improvements are not aligned with improvements to pedestrian pathways, including tree planting (biodiversity) and 'street and public space' concept.
5. Lacking nature-based solutions in the city in general (to improve hazard mitigation, water quality and quantity, tourism, etc).
6. Lack of leveraging existing green spaces - for example opening Botanical Gardens to the public is a missed opportunity and increasing programming opportunities in Jusaiev Park to improve use.

## Environmental Degradation and Pollution

1. Use of Brown Coal and energy pollution
2. River maintenance
3. Forest loss
4. Industrial degradation and potential pollution
5. Waste management lacking

## Vulnerability to Disaster Risk and Natural Hazards

1. See IHA for location of mitigation measures
2. Lacking of terracing and nature based solutions for mitigating mudflow, flooding, rockfall, erosion and underground flooding as well as air and water pollution.
3. Lacking mitigation in priority areas - these include areas with poorer housing quality, and income sensitivity, higher population, key road / connectivity points, convergence areas (e.g. Tosh Bulak where highest loss of infra at risk).
4. Lacking development restrictions/codes for seismic activity
5. Lacking hazard response plans, 'safe havens'

Figure 87. List of figures

Figure 1. NURP Activities and Expected Outputs . . . . .	5
Figure 2. Positioning of the Profile within the project structure. . . . .	6
Figure 3. UN-Habitat's Integrated Planning Approach using the Five City Objectives . . . . .	8
Figure 4. Geographical context of Naryn City . . . . .	12
Figure 5. Administrative and territorial division of the Kyrgyz Republic . . . . .	22
Figure 6. System of Executive Authorities in the Kyrgyz Republic. . . . .	23
Figure 7. Structure of the State Agency for Architecture, Construction, Housing and Communal Services. . . . .	25
Figure 8. Structure of the State Design Institute of Urban Planning and Architecture (Source: GPI) . . . . .	26
Figure 9. Structure of the Osh Branch of the State Design Institute of Urban Planning and Architecture (Source: GPI) . . . . .	27
Figure 10. Composition of local keneshes in Kyrgyzstan . . . . .	31
Figure 11. Composition of district keneshes in Kyrgyzstan . . . . .	31
Figure 12. Schematic representation of the 6-stage process of the General Plan development. . . . .	39
Figure 13. Gross income, 2021-2023 . . . . .	48
Figure 15. Expenses (Budgetary and Special Funds), 2021-2023. . . . .	49
Figure 14. Projected vs actual revenues, 2022 . . . . .	49
Figure 16. 2023 Operating Budget, Functional Allocations. . . . .	50
Figure 17. Expenditures: Budgeted vs Actual, 2021-2023. . . . .	50
Figure 18. Differences between budget and actual expenses, 2022. . . . .	51
Figure 19. GDP structure of Kyrgyzstan by selected economic sectors . . . . .	58
Figure 20. Selected manufacturing sectors value production measured in millions of Kyrgyz Soms . . . . .	59
Figure 21. Main drivers of national trade turnover measured in millions of Kyrgyz Soms . . . . .	59

Figure 22. National trade deficit measured in millions of US Dollars .....	59
Figure 23. Indicators of tourism development measured in millions of Kyrgyz Soms .....	60
Figure 24. Distribution of FDI in the main national economic activities .....	60
Figure 25. Naryn Oblast contribution to national GDP by major economic activities .....	61
Figure 26. Naryn's Gross Regional Product (GRP) composition .....	62
Figure 27. Cultivated area by major crops in Naryn Oblast. ....	62
Figure 28. Naryn Oblast vs National wool production .....	62
Figure 29. Naryn Oblast vs National meat production. ....	62
Figure 31. Share of Naryn City's livestock-based products to Naryn Oblast totals .....	63
Figure 32. Share of Naryn Oblast's totals to National Totals .....	63
Figure 33. Naryn Oblast wheat yield .....	64
Figure 36. Naryn Oblast vegetables yield .....	64
Figure 34. Naryn Oblast barley yield .....	64
Figure 37. Share of selected crops production across Naryn Oblast districts .....	64
Figure 35. Naryn Oblast potatoes yield. ....	64
Figure 38. Naryn Oblast contributions to the National manufacturing sector in millions of Soms. ....	64
Figure 39. Naryn City's manufacturing industry .....	65
Figure 40. Investment in Naryn City .....	65
Figure 41. Trade in Naryn Oblast .....	66
Figure 42. Trade in Naryn City .....	66
Figure 43. Naryn Oblast tourism visitors (Jan-Sep) .....	66
Figure 44. Number of population within each sub-district, and the population of each sub-district as a % of the total .....	72
Figure 45. Population Density and Population Number per sub-district .....	73
Figure 46. The total m <sup>3</sup> of building volume within each sub-district. ....	74
Figure 47. Average building volume within each sub-district (organised from West to East to replicate the city layout), highlighting higher volume building units as 'outliers' within each sub-district .....	74

Figure 48. Population Density by sub-district (organised from West to East to replicate the city layout) with average density (rectangle) and outliers (dots representing smaller areas within the sub district that are not within the average density) . . . . .	75
Figure 49. Land Use distribution within built-up area. . . . .	78
Figure 50. % of each land use found within each sub-district, highlighting the types of land uses within each sub district, as well as their proportion within that area. . . . .	80
Figure 51. Average Land Use Diversity within each sub-district . . . . .	81
Figure 52. Comparison of Activities Concentration and Diversity . . . . .	82
Figure 53. Average density of road network (m/ha) within each sub-district (showing the amount of road network in comparison to the size of the sub-district) . . . . .	86
Figure 54. Straightest path between residential units . . . . .	92
Figure 55. Straightest path chosen by residents against high diversity of land use . . . . .	93
Figure 56. The number of people per sub district that can access a bus stop in 5, 10, 15 and 20+ minutes . . . . .	94
Figure 58. Graph highlighting the 'imbalance' in public space provision in Naryn. . . . .	102
Figure 59. The % of people within each sub district that can access 0-15+ m <sup>2</sup> of public space . . . . .	103
Figure 60. Comparison between population density and public space provision to highlight those areas that do not reflect the population density of the city. . . . .	103
Figure 61. The number of people who live within an environment that has 15% occupied by open public space. This analysis uses a 15 minute walking distance to indicate the area that is assessed to ensure it is reflective of the current population density. . . .	104
Figure 62. The number of people within each sub-district that can access a green and public open space in 5, 10, 15, 20 and 20+ minute walks. . . . .	106
Figure 63. Proportion of the population within 5, 10, 15, 20 and 20+ minutes of a green public space. . . . .	108
Figure 64. Number of people who can access a green public space in 5, 10, 15, 20 and 20+ minutes . . . . .	108
Figure 65. Number of people that can access a playground in 5, 10, 15, 20 and 20+ minutes by sub-district. . . . .	110
Figure 66. Graph highlighting the number of children that are outside of a 10 minute walk from any playground in Naryn . . . . .	110
Figure 67. A comparison of the average time it takes to access a green area, playground or public space within each sub district . . . .	111
Figure 68. The total number of people accessing a kindergarten in 5, 10, 15, 20 and 20+ minutes. . . . .	112
Figure 69. The number of people accessing a kindergarten in 5, 10, 15, 20 and 20+ minutes within each sub-district . . . . .	112



Figure 70. The number of people accessing a school in 5, 10, 15, 20 and 20+ minutes within each sub-district .....	114
Figure 71. Average time to access a kindergarten or school within districts in Naryn .....	119
Figure 72. The number of people who have more than a 15 minute walk to access a general clinic (polyclinic) .....	120
Figure 73. The number of senior citizens (60 yrs +) who have to travel more than 15 minutes to a health facility .....	120
Figure 74. % of residential buildings connected to water pipeline. ....	124
Figure 75. Residential units lacking access and dependent on wells .....	124
Figure 76. Number of residential buildings with no sewage access .....	126
Figure 77. Number of people outside of 200m distance from solid waste collection points .....	129
Figure 78. Amount of infrastructure at risk from each hazard type within each sub-district .....	138
Figure 79. Number of people impacted if Secondary School No. 9 is no longer in operation .....	142
Figure 80. Number of people impacted if the bus stop at risk is no longer functioning .....	142
Figure 81. People impacted if Kindergarten Zhanerke is no longer operational .....	143
Figure 82. Building quality for all key facilities that could facilitate post-hazard recovery .....	144
Figure 83. Building quality assessment (source: IHA) .....	144
Figure 84. Total Length of Road Infrastructure at Risk .....	146
Figure 85. Number of people at risk from each hazard (hazards are grouped when spatially overlapping) .....	149
Figure 86. Disadvantaged groups at risk of hazards within each sub-district .....	149
Figure 87. Number of people exposed to any hazard that also live within a building that is considered 'poor', 'fair' or 'good' quality ...	150
Figure 88. Income sensitivity (based on household insurance) as a proportion (%) of the total households within each sub district ...	152
Figure 89. Buildings and population within each sub-district within the water protection zone .....	154





# Naryn

Kyrgyz Republic

2023-2024

Enhancing Resilience through Integrated Spatial and Investment Planning

## Legal Analysis of Kyrgyz Building Codes



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation



## Enhancing Resilience through Integrated Spatial and Investment Planning

### Naryn Design Guidelines

© 2024. Aga Khan Agency for Habitat (AKAH)  
United Nations Human Settlements Programme  
(UN-Habitat)

United Nations Human Settlements Programme  
P.O. Box 30030, 00100 Nairobi GPO KENYA  
Tel.: 254-020-7623120  
www.unhabitat.org

#### Disclaimer

Material in this report does not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or regarding its economic system or degree of development. The analysis, conclusions and recommendations of this publication do not necessarily reflect the views of the United Nations Human Settlements Programme or its Governing Council or its member states.

Reference in this publication of any specific commercial products, brand names, processes, or services, or the use of any trade, firm, or corporation name does not constitute endorsement, recommendation, or favouring by UN-Habitat or its officers, nor does such a reference constitute an endorsement of UN-Habitat.

#### UN-Habitat Urban Lab

Laura Petrella (Chief Planning, Finance and Economy Section)  
Laura Jean Pinar (Technical Advisor)  
Pinar Caglin (Project Manager, Planning and Design Technical Lead)  
Lennart Fleck (Finance and Economy Team Lead)  
Anne Amin (Governance and Legislation Team Lead)

#### Main Authors

Anna Kvashuk (Urban Legislation)  
Aigul Alymkulova

#### Reviewer

Samuel Gachohi Njuhuna

Local experts specialising in legislation, local governance and ecology.

#### Layout Design & Graphics

Annesofie Sharon Achera Misiani  
Jagnoor Hunjan  
Maia Smillie

#### AKDN, Project Mangement Unit

Surekha Ghogale (Senior Advisor)  
Omurbek Ibraev (Project Manager)  
Nurbek Omurzakov  
Aizaada Bekboeva  
Salamat Ismakeeva

#### Aga Khan Agency for Habitat

Aziz Husein (Head of Sustainable Built Environment and Capital Projects)  
Kira Intrator (Head of Planning and Innovation)

And with thanks to all who participated in meetings, field trips and working sessions from the government, service providers, AKAH, AKDN, UCA and inhabitants of Naryn.



AGA KHAN DEVELOPMENT NETWORK



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation





## Table Of Content

TERMINOLOGY AND ACRONYMS . . . . .	4		
INTRODUCTION . . . . .	5		
1. Building Codes and Climate Context in Kyrgyzstan: An Overview . . . . .	6		
2. Analysis of Building Codes through the Regulatory Perspective . . . . .	8		
2.1. Age of Building Codes . . . . .	8		
2.2. Uniformity or Differentiation of Application . . . . .	9		
2.3. Scope of Local Materials . . . . .	9		
2.4. Resource-Efficient Measures . . . . .	10		
2.5. Consideration of Small/Low-Cost Housing . . . . .	10		
3. Analysis of Kyrgyz Building Codes through the Climate-Responsive Perspective . . . . .	11		
3.1. Building Site and Orientation . . . . .	11		
3.2. Building Configuration and Layout . . . . .	12		
3.3. Natural Ventilation . . . . .	13		
3.4. Shading and Cool Surfaces . . . . .	13		
3.4.1. Glazing, Opening and Shadings . . . . .	14		
3.4.2. Roofs . . . . .	15		
		3.4.2.1. Insulation . . . . .	15
		3.4.2.2. Reflective Surfaces . . . . .	15
		3.4.2.3. Attic Space Ventilation . . . . .	16
3.5. Thermal Adaptation and Materials for Thermal Comfort . . . . .	16		
		3.5.1. Vapor Barrier . . . . .	16
		3.5.2. Façade Glazing . . . . .	17
		3.5.3. Façade paint . . . . .	17
		3.5.4. Materials . . . . .	18
4. Conclusion . . . . .	20		
5. Annex . . . . .	22		

## TERMINOLOGY AND ACRONYMS

**CTCN** UN Climate Technology Center

**KR** Kyrgyz Republic

**MSN** Interstate Building Norms

**NURP** Naryn Urban Resilience Programme

**SN** Building Codes

**SNiP** Building Codes and Rules

**SP** Building Rules

**UNEP** United Nations Environment Programme

# INTRODUCTION

This document is a continuation of the series of publications prepared as part of "A Resilience Informed Urban Planning Support to the Naryn Urban Resilience Programme (NURP)" project, particularly the "Analysis of Kyrgyz Legislation Using the UN-Habitat Urban Law Module of the Law and Climate Change Toolkit." Its key objective is to analyze Kyrgyz building codes by applying UN-Habitat and United Nations Environment Programme (UNEP) methodologies to assess their effectiveness and alignment with international legal standards. This analysis<sup>1</sup> aims to identify gaps and areas for improvement, ultimately guiding the development of more resilient, sustainable, and inclusive construction practices in Kyrgyzstan. It comprises three chapters and conclusions summarizing key areas of improvement and recommendations. Moreover, it contains an annex with the feedback from the participants of the workshop held on June 14th, 2024, in Bishkek, Kyrgyzstan, on the applicability of the Order of the State Agency for Architecture, Construction and Housing and Communal Services "On Measures to Create a Favorable Investment Climate" dated 05.06.2024.

Thus, Chapter 1 of this document provides an overview of Kyrgyzstan's geography and climate, with a particular focus on Naryn, and examines how these factors influence building codes. The primary focus is on the importance of introducing green building practices, which are essential for creating sustainable and energy-efficient structures. These practices address the need for resilience against extreme weather conditions from different perspectives to ensure that buildings are well-insulated and energy-efficient.

Chapter 2 presents an assessment of Kyrgyz building codes from a regulatory standpoint using the UN-Habitat methodology called Planning Law Assessment Framework. The primary emphasis is on evaluating the alignment of building codes with the five fundamental principles of the methodology: age of building codes, uniformity or differentiation of application, the scope for local materials, resource-efficient measures, and consideration of small/low-cost housing. By evaluating Kyrgyz building codes through these five principles, the chapter aims to provide insights into the level of Kyrgyz building codes adherence to international best practices in sustainable construction.

Chapter 3 offers an examination of Kyrgyz building codes through the lens of climate responsiveness, utilizing the UNEP methodology called "A Practical Guide to Climate-resilient Buildings & Communities", which comprises the following components: building site, orientation, configuration and layout, natural ventilation, shading and cool surfaces, as well as thermal adaptation and materials for thermal comfort. Through this evaluation, the chapter aims to assess how well Kyrgyz building regulations integrate these climate-responsive elements to mitigate environmental impacts and enhance occupant comfort. By aligning with these principles, the objective is to identify areas where the building codes excel and where improvements can be made to foster more sustainable and resilient built environments in Kyrgyzstan.

The recommendations section offers specific guidance to Kyrgyzstan on potential improvements to their building codes, aiming to bolster resilience against natural hazards and enhance overall building safety.

Finally, the annex of this document includes the opinion of the local experts on the applicability of the Order "On Measures to Create a Favorable Investment Climate" dated 05.06.2024.

<sup>1</sup> Overall, this document analyzes and references around ten related Kyrgyz normative legal acts. While we acknowledge the letter of the State Agency for Architecture, Construction and Housing and Communal Services No.03/4364 dated 07.08.2024 regarding the possibility of applying interstate building codes, building regulations and standards, as well as technical regulations of the Eurasian Economic Union in the field of construction, etc., the emphasis in this document was placed exclusively on standards unique to the Kyrgyz Republic.



## 1. Building Codes and Climate Context in Kyrgyzstan: An Overview

Building codes play a crucial role in enhancing the health, safety, and welfare of communities and people. They help improve occupant and community health, increase resilience, reduce greenhouse gas emissions, and generate significant savings for residents and businesses. As climate change increases the number and severity of natural disasters, building codes become even more vital in ensuring structures can withstand these challenges. These codes should establish the fundamental criteria for safely designing and constructing buildings to withstand natural hazards, including the impacts of climate change. Nevertheless, for building codes to be effective, they need to address challenges specific to certain areas, such as coastal regions prone to hurricanes or typhoons, seismic zones vulnerable to earthquakes, and areas susceptible to wildfires or flooding. In these diverse environments, local conditions often require tailored building regulations that consider unique geological, meteorological, and environmental factors.

Kyrgyzstan's diverse climate and topography are no exception. Settlements in the valley-sub-mountain zone (900-1,200 meters) experience hot summers, temperate, snow-free winters, and minimal precipitation, while those in the high-mountain zone (3,000-3,500 meters) have moderate climates with warm summers and cold, snowy winters.<sup>2</sup> Thus, building codes must account for these variations to ensure resilient and energy-efficient human settlements. For example, building codes should emphasize measures to manage heat gain during hot summers, such as proper insulation, shading techniques, and efficient ventilation systems for settlements in the valley-sub-mountain zone.

Furthermore, these building codes should encourage using materials that reflect sunlight and dissipate heat, minimizing the urban heat island effect. Also, design considerations such as orientation and layout should optimize natural shading and airflow, enhancing comfort without relying heavily on energy-intensive cooling systems. In contrast, for high-mountain settlements, building codes should focus on enhancing thermal insulation to withstand cold winters and heavy snowfall. Roof designs and materials should be selected to prevent snow accumulation and structural damage while also ensuring adequate heating systems are in place for comfort and safety during prolonged cold spells. Also, incorporating passive solar heating strategies, such as maximizing south-facing windows and thermal mass materials, can help harness sunlight for warmth during winter months while reducing reliance on heating systems. This will generate significant savings for residents and businesses. Additionally, across all zones, building codes should promote the use of sustainable local materials that reduce environmental impact and resource consumption. Thus, Naryn, located at 2,044 meters above sea level, has a mid-latitude steppe climate with an average annual temperature of 2.71°C, which is 6.9% lower than the national average.<sup>3</sup> This colder climate requires careful consideration in building design, focusing on insulation, heating efficiency, and infrastructure resilience to create sustainable and environmentally adapted development in the city.

2. Climatology: Kyrgyzstan. <https://climateknowledgeportal.worldbank.org/country/kyrgyz-republic/climate-data-historical>

3. Naryn Climate Summary. <https://weatherandclimate.com/kyrgyzstan/naryn>



In essence, building codes worldwide serve as a proactive measure to enhance community resilience, mitigate climate risks, and promote sustainable development. By continuously updating and enforcing these codes, governments and communities can build safer, healthier, and more sustainable environments for current and future generations. Kyrgyzstan already benefits from solid building codes, but with some minor adjustments to better align them with the country's diverse climate and geographical challenges, they could be even more effective. These norms will ensure that new constructions and renovations are equipped to withstand extreme weather events, such as temperature fluctuations. By integrating green building practices and energy-efficient standards, Kyrgyzstan can reduce its carbon footprint while enhancing the comfort and safety of its citizens. Emphasizing local materials in the codes will not only preserve cultural heritage but also stimulate the local economy. Ultimately, robust building codes will lay the foundation for sustainable urban and rural development, fostering resilience and prosperity throughout Kyrgyzstan.



## 2. Analysis of Building Codes through the Regulatory Perspective

Building codes and regulations must be contextually relevant and adaptable, particularly in countries with diverse climates, varying precipitation patterns, and significant temperature fluctuations. Tailoring building regulations to local conditions is crucial, as it allows for consideration of risk profiles, regional building practices, the availability of materials, and economic circumstances. By doing so, the regulations can ensure that buildings are safe, resilient, and efficient, effectively meeting different areas' specific needs and challenges.

Thus, to effectively tailor international best practices to Kyrgyzstan's building code, the UN-Habitat Planning Law Assessment Framework<sup>4</sup> was utilized to conduct the legal analysis. This framework serves as a rapid self-assessment tool designed to evaluate the strengths and weaknesses of urban planning legislation, including building codes, based on the following five criteria:

- » Age of Building Code
- » Uniformity or Differentiation of Application
- » Scope for Local Materials
- » Resource-efficient Measures
- » Consideration of Small/Low-Cost Housing

The below analysis which has been done using the above criteria will allow us to pinpoint areas of building codes and regulations in Kyrgyzstan that need improvement.

### 2.1. Age of Building Codes

Building codes should be periodically reviewed, considering their effectiveness in delivering safe and resilient housing, meaning they should incorporate new knowledge related to the experience of building performance in construction materials and practices. UN-Habitat's methodology outlines five indicators (0-10 years; 10-20 years; 20-30 years; 30-50 years; no building code) to assess the relevance of building codes. Nevertheless, since in Kyrgyzstan, the building codes are not unified and are developed separately to govern each topic, further review will help define an average review period for Kyrgyz building codes.

Among eight valid building codes discussed further in Chapter 3, two building codes from Soviet times—SNiP II-26-76 "Roofs" and 1987 Guidelines for the Technical Operation of Roofs of Residential Buildings with Rolled, Mastic and Steel Roofs—haven't undergone any review for almost 50 years and are still being applied in Kyrgyzstan.

A significant development occurred with the enactment of the Law "On the Energy Efficiency of Buildings" in 2011, prompting the revision of SNiP KR 23-01:2013 "Building Heat Engineering (Heat Protection of Buildings)" and the Code of Rules for Design and Construction SP 23-101-2013 "Thermal Protection Design for Buildings" after 2009 and the introduction of 2012 Regulations on the Procedure for Energy Certification of Buildings.

SN KR 31-09:2018 "Single-Apartment Residential Buildings," which came into effect in 2018, replaced the earlier document from 2001. Similarly, SN KR 30-01:2020 "Planning and Building of Cities and Urban Settlements" entered into force in 2020, replacing the previous document from 2016.

4. UN-Habitat. (2018). Planning Law Assessment Framework. [https://unhabitat.org/sites/default/files/download-manager/files/1531834456wpm\\_Planning%20Law%20Assessment%20Framework.pdf](https://unhabitat.org/sites/default/files/download-manager/files/1531834456wpm_Planning%20Law%20Assessment%20Framework.pdf)



The latest building code to be reviewed after more than 30 years is SN KR 41-04:2022 "Heating, Ventilation and Conditioning." Introduced initially in 1991, this revision marks the first comprehensive overhaul in over three decades. Lastly, the building code governing residential multi-apartment buildings is currently under review for the first time since the enactment of MSN 3.02-04-2004 "Multi-apartment residential buildings" in 2004. Thus, to sum up, the average review period of eight Kyrgyz building codes in Kyrgyzstan is around seven years, reflecting a dynamic approach to updating regulatory frameworks. However, the presence of two Soviet-era codes, which have not been revised for almost 50 years, underscores the need for more frequent and comprehensive reviews across all building code sectors. This approach ensures that Kyrgyzstan's building standards remain relevant, effective, and aligned with contemporary practices in construction materials and methodologies, thereby enhancing its built environment's safety, resilience, and energy efficiency.

## 2.2. Uniformity or Differentiation of Application

UN-Habitat<sup>5</sup> promotes the implementation and enforcement of building codes at the local level, which should be based on the tenets of the national regulations. However, with respect to Kyrgyzstan and its building codes analyzed in Chapter 3, they are exclusively national in nature and set country-wide standards with direct application at the local level. Therefore, Kyrgyz legislation doesn't allow the possibility of adapting building codes to specific locality.

## 2.3. Scope of Local Materials

Building codes should allow and encourage using locally available materials and construction techniques. Developing a building code suitable to local, social, and economic conditions is fundamental to safely using locally sourced materials and building practices.<sup>6</sup>

The use of local materials has been specified in the Soviet 1955 Building Norms and Rules "Building Materials, Parts and Constructions."<sup>7</sup> These standards encouraged the use of local raw materials in the production of building materials. The building code of 1962 "Building Materials, Products, Constructions, and Equipment"<sup>8</sup> stipulates that it is necessary to use, as much as possible, local building materials such as gypsum, gypsum-slag, slag-concrete, gas-ash-concrete, gas-and foam-silicate, and similar materials instead of the wooden parts of the building.

In contrast to the earlier Soviet standards, which explicitly encouraged the use of local materials, current Kyrgyz building codes do not include such provisions but could greatly benefit from reintroducing similar principles. Incorporating measures that facilitate and incentivize the use of locally sourced materials would not only help reduce the environmental impact associated with transportation and material extraction but also foster cultural and economic sustainability within the region.

5. UN-Habitat. (2018). Planning Law Assessment Framework. [https://unhabitat.org/sites/default/files/download-manager-files/1521834456wpdm\\_Planning%20Law%20Assessment%20Framework.pdf](https://unhabitat.org/sites/default/files/download-manager-files/1521834456wpdm_Planning%20Law%20Assessment%20Framework.pdf)

6. Ibid

7. Soviet Building Norms and Rules "Building Materials, Parts, and Constructions". (1955). <https://files.stroyinf.ru/Data2/1/4293787/4293787381.pdf>

8. Soviet Building Code "Building Materials, Products, Constructions, and Equipment". (1962). <https://files.stroyinf.ru/Data2/1/4293777/4293777740.pdf>

Therefore, it is recommended to enshrine in modern Kyrgyz building codes a provision to encourage the use of locally available materials. This will reduce environmental impacts from transportation and material extraction, while also supporting local economies and preserving cultural heritage. Moreover, integrating these principles into the modern regulatory framework would promote sustainable building practices, enhance community resilience, and contribute to the overall goal of creating eco-friendly and culturally relevant built environments in Kyrgyzstan.

## 2.4. Resource-Efficient Measures

The term "green building practices" refers to the use of resource-efficient methods in construction which aim is to lower greenhouse gas emissions by employing sustainable design and materials.<sup>9</sup> This could be achieved by applying climate-sensitive practices, which are extensively discussed in Chapter 3.

## 2.5. Consideration of Small/Low-Cost Housing

UN-Habitat's methodology promotes considering low-cost options for small/low-cost housing by subsidizing specific materials, promoting fast-track approval, and/or providing specific housing typologies.

While the 2013 Housing Code is valid in Kyrgyzstan and discussions on the draft law "On Social Housing" are ongoing, no enacted technical requirements define what constitutes affordable or social housing. Therefore, to advance housing initiatives that meet the needs of the population and align with international best practices, it is recommended to establish standards for low-cost housing in Kyrgyzstan. These should include specifications for building materials, construction methods, and design standards. Additionally, creating financial incentives and support mechanisms will further support these initiatives.



9. UN-Habitat. (2018). Planning Law Assessment Framework. [https://unhabitat.org/sites/default/files/download-manager/files/3531834456wpdm\\_Planning%20Law%20Assessment%20Framework.pdf](https://unhabitat.org/sites/default/files/download-manager/files/3531834456wpdm_Planning%20Law%20Assessment%20Framework.pdf)



### 3. Analysis of Kyrgyz Building Codes through the Climate-Responsive Perspective

Climate-responsive architecture focuses on designing buildings that harmonize with the local climate rather than working against it. Such buildings should be designed to reflect the specific weather conditions of their location, using data on regional weather patterns. They must consider factors like seasonality, sun intensity, wind, rainfall, and humidity.<sup>10</sup> In general, and according to the UNEP methodology called "A Practical Guide to Climate-resilient Buildings & Communities"<sup>11</sup> the following facts should be considered when designing high-performance buildings:

- » Building Site and Orientation
- » Building Configuration and Layout
- » Natural Ventilation
- » Shading and Cool Surfaces
- » Thermal Adaptation and Materials for Thermal Comfort<sup>12</sup>

This chapter will analyze the building codes of Kyrgyzstan based on these defined categories. It will evaluate how current regulations address or could be improved to address these aspects of climate-responsive design, aiming to enhance energy efficiency, indoor comfort, and sustainability in the built environment of Kyrgyzstan.

#### 3.1. Building Site and Orientation

To adapt to increasing temperatures and to mitigate overheating, a building's performance can be significantly impacted by its location<sup>13</sup> meaning its orientation in relation to the path of the sun and the prevailing wind in a specific region. For passive solar design, the building must have the appropriate orientation of openings and spaces to achieve maximum daylight with maximized or minimized heat gain, which depends on the location and season. To achieve good orientation, the most important factors to consider are:

- » region climate,
- » true north and sun angles for the site or building,
- » the optimum building design for its applicable climate zone,
- » the effects of climate change<sup>14</sup>

10. Maleka'zali, A. (n.d.). The Future of Architecture: Climate-Responsive Design. [https://www.sageglass.com/sites/default/files/the\\_future\\_of\\_architecture\\_-\\_climate-responsive\\_design\\_0.pdf](https://www.sageglass.com/sites/default/files/the_future_of_architecture_-_climate-responsive_design_0.pdf)

11. United Nations Environment Programme (2021). A Practical Guide to Climate-Resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

12. While we recognize the importance of addressing seismicity in building construction, the methodologies currently mentioned do not cover this topic. Nevertheless, we acknowledge that the topic of seismic resistance exists in Kyrgyz building code SN KR 20-02:2024 Earthquake Engineering. Seismic Design Codes: [https://gosstroy.gov.kg/index.php/ru/state\\_program/download-pdf/3\\_compressed1-47565a7afba447202.17639916.pdf](https://gosstroy.gov.kg/index.php/ru/state_program/download-pdf/3_compressed1-47565a7afba447202.17639916.pdf)

13. Ibid

14. Orientation | YourHome. (n.d.). <https://www.yourhome.gov.au/passive-design/orientation>

In Kyrgyzstan, the construction standards SN KR 31-09:2018 "Single-Apartment Residential Buildings"<sup>15</sup> approved by Order of the State Agency for Architecture, Construction and Housing and Communal Services of December 27, 2018, No. 24-npa in terms of achieving optimal technical and economic characteristics of housing, as well as reducing specific energy consumption for heating, entail considering the most rational orientation of the house and its rooms relative to the cardinal points. This should be done while considering the prevailing directions of cold wind and solar radiation flows.

Therefore, Kyrgyz building codes address the topic of building site and orientation by emphasizing the importance of positioning buildings to optimize their exposure to sunlight and prevailing winds. This approach ensures that homes can maximize natural daylight and heat gain during the winter while minimizing overheating in the summer.

### 3.2. Building Configuration and Layout

The shape and surroundings of a building significantly impact its energy consumption, as they can lead to heat gain during cooling periods and heat loss during periods when heat is needed. Thus, in cold climates, the main rooms should either be south-facing (in the northern hemisphere) or north-facing (in the southern hemisphere) to capture as much solar gain (and thereby, warmth) as possible. In hot climates, the opposite can be done to reduce the heat gained from the sun during the day.<sup>16</sup> The insolation (solar radiation) concept is responsible for this.

The urban planning-related document of Kyrgyzstan – SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type"<sup>17</sup> widely considers the insolation topic. It defines that the placement and orientation of residential and public buildings (apart from preschool institutions, general education schools, and boarding schools) should ensure the continuous duration of insolation of residential premises and territories, south of 58 N.L. for at least 2.5 hours a day for the period from March 22 to September 22. In residential buildings of the meridional type, where all rooms of the apartment are insulated, as well as during the reconstruction of residential buildings or when placing new construction in especially difficult urban planning conditions (historically valuable urban environment, expensive preparation of the territory, the zone of the citywide and regional center), it is allowed to reduce the duration insolation of the premises for 0.5 hours, for each zone respectively. Moreover, the document determines that trees planted near buildings should not interfere with the insolation of residential and public buildings.

Thus, Kyrgyz building codes comprehensively address the configuration and layout of buildings to optimize energy efficiency and indoor comfort. By ensuring that main rooms are oriented to maximize solar gain in colder times and minimize it in hotter ones, these standards help reduce energy consumption for heating and cooling.

15. SN KR 31-09:2018 "Single-Apartment Residential Buildings". (2018). <https://cbd.minjust.gov.kg/200301/edition/924646/ru?anchor=p1>

16. United Nations Environment Programme (2021). A Practical Guide to Climate-Resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

17. SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>



### 3.3. Natural Ventilation

Both the building's orientation on the site and the building's internal configuration can be designed to take advantage of cooling breezes. The prevailing wind direction should be considered when deciding the building orientation on the site to allow for optimum positioning of windows and to maximize natural ventilation whenever outside temperatures are low. Directing the prevailing winds towards the building is one of the best ways to achieve relative "coolth" in habitable spaces.<sup>18</sup>

Current construction standards of Kyrgyzstan SN KR 41-04:2022 "Heating, Ventilation and Conditioning"<sup>19</sup> approved by Order of the State Agency for Architecture, Construction and Housing and Communal Services dated November 9, 2022, No. 55-npa, provide for the establishment of three types of ventilation: natural, mechanical, and mixed. The document enshrines the recommended average air speeds in air ducts of supply and exhaust ventilation systems in terms of the natural ventilation for both residential (0-2,5 m/s) and industrial (0,5-0,1) buildings. It also defines that ventilation systems with natural induction for industrial premises should be calculated:

in the cold period of the year for all heated premises and in the warm period of the year for premises with excess heat – based on the difference in the specific gravity of air at the calculated parameters of the external and internal air of the considered period of the year; in the warm season for rooms without excess heat – based on the action of the wind, assuming a wind speed of 1 m/s.

Moreover, the construction standards SN KR 31-09:2018 "Single-Apartment Residential Buildings"<sup>20</sup> emphasize the importance of ensuring natural ventilation by allowing the premises to be ventilated through windows, vents, transoms, and similar openings.

Therefore, Kyrgyz building codes address the importance of natural ventilation in enhancing indoor air quality and thermal comfort. By considering the building's orientation and internal configuration to harness prevailing winds, the standards promote the use of natural ventilation to reduce reliance on mechanical cooling systems.

### 3.4. Shading and Cool Surfaces

Effective shading and cool surface strategies are essential for optimizing energy efficiency and indoor comfort in buildings, especially in regions like Kyrgyzstan, where solar exposure varies significantly throughout the year. This could be achieved through strategic placement of external shading devices, which block direct sunlight during hot summer months while allowing beneficial solar heat gain in winter. Additionally, using reflective roofing materials and light-colored coatings on building surfaces helps minimize heat absorption and reduce the urban heat island effect. These measures not only lower cooling demands but also enhance occupant comfort and support sustainable building practices in Kyrgyzstan's diverse climate conditions.

18. United Nations Environment Programme (2021). A Practical Guide to Climate-Resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

19. construction standards of Kyrgyzstan SN KR 41-04:2022 "Heating, Ventilation and Conditioning". (2022). <https://cbd.minjust.gov.kg/200758/edition/1207828/ru>

20. SN KR 31-09:2018 "Single-Apartment Residential Buildings". (2018). <https://cbd.minjust.gov.kg/200301/edition/924646/ru?anchor=p1>

### 3.4.1. Glazing, Opening and Shadings

Since Kyrgyzstan is placed in the northern hemisphere, it is essential to ensure that buildings have adequate shading for windows facing west and south. This approach helps block direct solar radiation in the latter part of the day during the hot summer months while allowing beneficial sunlight during the winter. This could be achieved by using the overhang, which, in most cases, should be 0.5, i.e., the length of the overhang divided by the distance from the bottom of the shading element to the bottom of the window glazing, vegetation, architectural projections, such architectural elements as jaali screens<sup>21</sup> shutters, etc.<sup>22</sup>



21. jaali screens is a traditional architectural element commonly found in South Asian and Islamic architecture. It is a perforated stone or lattice screen, typically made from materials like marble, sandstone, or wood. These screens are characterized by intricate geometric and floral patterns.

22. United Nations Environment Programme (2021). A Practical Guide to Climate-Resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmli/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

23. Kyrgyzstan is developing building standards taking into account energy efficiency. (December 24, 2022). [https://24.kg/ekonomika/254296\\_vkyrgyzstane\\_razrabatyvayut\\_stroitelnyie\\_normyi\\_suchetom\\_energoeffektivnosti/](https://24.kg/ekonomika/254296_vkyrgyzstane_razrabatyvayut_stroitelnyie_normyi_suchetom_energoeffektivnosti/)

24. based on the example from the Code of Rules for Design and Reconstruction SP 31-107-2004 "Architectural and planning designs of apartment buildings" (2004). [https://terrauoz.net/\\_id/3/380\\_105.pdf?roistat\\_visit=2055364](https://terrauoz.net/_id/3/380_105.pdf?roistat_visit=2055364)

25. draft order of the State Construction Committee "On approval of the Construction Standards of the Kyrgyz Republic "Residential multi-apartment buildings". (January 16, 2023). <http://koomtalkua.gov.kg/ru/view-npa/2315>

26. draft building code "Multicompartment residential buildings". <https://www.ctc-n.org/system/files/dossier/3b/Appartment%20building%20codes-%20Russian.pdf>

27. paragraph 9.17 of draft building code "Multicompartment residential buildings". <https://www.ctc-n.org/system/files/dossier/3b/Appartment%20building%20codes-%20Russian.pdf>

Since 2022<sup>23</sup> Kyrgyzstan has been in the process of updating its building code for residential multi-apartment buildings, where the shading windows topic is primarily addressed,<sup>24</sup> to introduce energy efficiency elements.<sup>25</sup>

Although the official draft of the building code is not publicly accessible, the draft "Multicompartment residential buildings" building code prepared by the UN Climate Technology Center (CTCN) is available online<sup>26</sup> Regarding window shading, the draft specifies that in buildings intended for construction in Climatic Region III, light openings in living rooms, kitchens, and loggias in Climatic Subregion IV must include external adjustable sun protection within the 200-290° sector. For two-story buildings, sun protection may alternatively be achieved through landscaping.<sup>27</sup>





Therefore, while the work is still ongoing, it is recommended to enshrine the window shading provision using on-glass, on-window-frame, or external types of shading to ensure effective solar control and energy efficiency. This could include overhangs, blinds, both stationary and mobile sun protection grilles, shade canopies, or elements for vertical gardening.<sup>28</sup> With such elements, it will be possible to significantly reduce energy consumption for cooling during the summer and heating during the winter, enhance indoor comfort, and contribute to the overall sustainability of residential buildings in Kyrgyzstan.

### 3.4.2. Roofs

The roof is a large, exposed surface area and can constitute up to 70 percent of a building's total heat gain.<sup>29</sup> This can be a building's vulnerability point; as the sun hits the surface for much of the day, a significant amount of heat can enter (in hot climates) or escape the building (in cold climates). Among the available options, the protection of the roof takes place through appropriate insulation, reflective surfaces<sup>30</sup> as well as attic space ventilation. While the research didn't reveal any updated building code in Kyrgyzstan where the topic of roofs is regulated, it is presumed that the latest Soviet building code SNiP II-26-76 "Roofs" (hereinafter referred to as "SNiP II-26-76 "Roofs")<sup>31</sup> and 1987 Guidelines for the Technical Operation of Roofs of Residential Buildings with Rolled, Mastic, and Steel Roofs (hereinafter referred to as "1987 Guidelines")<sup>32</sup> should be applicable.

#### 3.4.2.1. Insulation

Roof insulation is a key component of green building, as it can reduce energy consumption, improve indoor comfort, and lower greenhouse gas emissions. Effective roof insulation helps maintain consistent indoor temperatures, reducing the need for heating and cooling systems. Both SNiP II-26-76 "Roofs" and 1987 Guidelines provide for the necessity to insulate the roofs, thermal insulation materials as well as their coefficients of thermal conductivity. Therefore, materials with a lower thermal conductivity coefficient do not conduct heat well, which is essential for effective thermal insulation. According to Annex 5 of the 1987 Guidelines, examples of such materials include mineral wool with a coefficient of 0.043 and glass wool with a coefficient of 0.044. These materials are preferred for their ability to minimize heat transfer, contributing significantly to building energy efficiency. Such an approach saves energy, reduces utility costs, contributes to a more stable indoor climate, reduces temperature fluctuations, and promotes a healthier living environment.

#### 3.4.2.2. Reflective Surfaces

The roof reflectivity could be achieved using roofing materials with a high solar reflectance index (SRI), including white broken china mosaic, high SRI paints, and other materials. Increasing the reflective quality (albedo) of the roof and walls contributes to an overall reduction in the urban heat island. The cool roof approach could reflect sunlight and absorb less heat. They can reduce indoor temperatures by 1°C to 4°C, potentially lowering energy bills by up to 20 percent.<sup>33</sup>

28. Including also based on AKDN Green Building Standards. (2021)

29. Al-Obaid, K., M. Ismail, and A. Rahman, Passive cooling techniques through reflective and radiative roofs in tropical houses in Southeast Asia: A literature review. *Frontiers of Architectural Research*, 2014.

30. United Nations Environment Programme (2021). A Practical Guide to Climate-resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

31. USSR SNiP II-26-76 "Roofs" (1976). <https://files.stroyinf.ru/Data2/1/4294854/4294854778.htm>

32. Guidelines for the Technical Operation of Roofs of Residential Buildings with Rolled, Mastic and Steel Roofs (1987). <https://files.stroyinf.ru/Data2/1/4293802/4293802014.pdf>

33. Ibid

SNiP II-26-76 "Roofs" briefly states that to reduce the heating temperature of the roof, protective layer materials (for example, gravel) of light colors should be used. However, despite the widespread use of roof cooling, these proposals using light gravel are only applicable to flat roof shapes or to roofs with a slight incline. 1987 Guidelines, on the one hand, mention that rolled roofs should have a protective layer on top with a light outer surface while, on the other hand, they state that to reduce solar radiation on the roof it is recommended to use light-colored paint materials with a solar energy absorption coefficient not higher than 0.6: Organ silicate compositions of light colors: VN-30, VN-30-DTOH, VN-30DT; Enamel KO-174, Lacquer MET-1; Silicone hydrophobic liquids: GKZh-10, GKZh-11, GKZh-94, BT 177 paint.

#### 3.4.2.3. Attic Space Ventilation

The possibilities for air circulation are significantly reduced in complex roof structures and in the presence of architectural elements (attics, parapets, skylights, etc.). Therefore, another important component of the roof concept is the attic space ventilation, which serves two main functions: to lower attic temperatures and to remove excess moisture<sup>34</sup> 1987 Guidelines provide for two types of ventilation – in the form of a slot along the roof ridge and in the form of a gap under the sheathing and in the form of separate holes in the eaves part. This helps prevent the buildup of heat that can potentially damage roofing materials and increase cooling costs for the building below.

In conclusion, shading and cooling surfaces are covered in Kyrgyz legislation, which focuses on enhancing energy efficiency and indoor comfort in buildings. Effective shading, reflective roofing materials, and proper ventilation strategies are crucial for optimizing thermal performance and reducing energy consumption. By implementing these measures, buildings can significantly lower cooling demands during hot months and maintain warmth during colder periods. However, it is recommended to explicitly include guidelines for window shading in the relevant

Kyrgyz building codes to ensure effective solar control and further enhance energy efficiency.

Implementing these measures will not only reduce energy consumption for cooling in summer and heating in winter but also improve indoor comfort and promote the overall sustainability of residential buildings in Kyrgyzstan.

### 3.5. Thermal Adaptation and Materials for Thermal Comfort

Designing energy-efficient buildings and promoting thermal adaptation is crucial, especially in cold climates. In general, thermal adaptation relates to the efficiency of a building to resist heat loss through building elements such as walls, floors, roofs, and windows. This is done considering factors such as the vapor barrier, façade glazing and paint, as well as the materials.

#### 3.5.1. Vapor Barrier

In the realm of thermal adaptation strategies, the vapor barrier plays a crucial role in enhancing building performance and energy efficiency. Serving as a protective layer within the building envelope, a vapor barrier helps control moisture movement, preventing the passage of water vapor from warm interior spaces to cooler exterior environments. The vapor barrier ensures a healthier and more durable indoor environment by effectively mitigating the risk of condensation and moisture-related issues, such as mold growth and structural deterioration. It helps to maintain a comfortable and consistent temperature, optimize thermal insulation, and minimize energy losses. As an essential component of thermal adaptation strategies, a well-designed and properly installed vapor barrier contributes to sustainable and resilient buildings, promoting long-term occupant comfort. The vapor barrier component has been defined in Kyrgyz SNiP KR 23-01:2013 "Building Heat Engineering (Heat Protection of Buildings)" (hereinafter referred to as "SNiP KR 23-01:2013")<sup>35</sup> and the Code of Rules for Design and Construction SP 23-101-2013 "Thermal Protection

34. Attic Ventilation 101 | IIBEC. The International Institute of Building Enclosure Consultants (IIBEC). 2023b, January 24). <https://iibec.org/attic-ventilation-101/>

35. SNiP KR 23-01:2013 "Building Heat Engineering (Heat Protection of Buildings)" (2013). [https://www.energoestr.kg/sites/default/files/documents/CHЖТ:Тепловая\\_защита\\_зданий\\_2013\\_RUS.pdf](https://www.energoestr.kg/sites/default/files/documents/CHЖТ:Тепловая_защита_зданий_2013_RUS.pdf)



Design for Buildings" (hereinafter referred to as "SP 23-101-2013")<sup>36</sup>.

Thus, the documents stipulate the necessity of installing a vapor barrier beneath the thermal insulation layer to protect it from moisture in buildings with humid or wet conditions. They also include a table detailing the vapor resistance of various materials. In this way, it is possible to ensure the insulation's longevity and effectiveness, prevent mold and mildew growth, and maintain a healthy indoor environment.

### 3.5.2. Façade Glazing

It is essential to ensure a balanced coefficient (minimum 10%) of façade glazing for a well-designed and energy-efficient building envelope. According to the SNiP KR 23-01:2013<sup>37</sup>, the glazing coefficient for residential buildings should be no more than 15%, while for public buildings, it should not exceed 25% meaning that Kyrgyz legislation ensures that buildings maintain a balance between natural light and thermal performance.

### 3.5.3. Façade paint

Façade paint is another crucial component since it serves as an effective strategy to minimize heat absorption. By utilizing reflective pigments, white colors can reflect a significant portion of solar radiation rather than absorbing it. This reflective property helps to reduce the amount of heat that is transferred into the building's interior, keeping the indoor spaces cooler and reducing the reliance on cooling systems. White or light-colored facades act as a thermal barrier, mitigating heat gain and creating a more comfortable and energy-efficient environment. Additionally, this approach contributes to an overall urban heat island mitigation, as lighter colors

reduce the heat radiated back into the surrounding environment. By harnessing the power of color, buildings can optimize thermal performance, decrease energy consumption, and promote sustainable and climate-conscious design practices.



36. Code of Rules for Design and Construction SP 23-101-2013 "Thermal Protection Design for Buildings". (2013). [https://energoreestr.kg/sites/default/files/documents/СП-Тепловая-защита-зданий\\_2013\\_RUS.pdf](https://energoreestr.kg/sites/default/files/documents/СП-Тепловая-защита-зданий_2013_RUS.pdf)

37. Kyrgyz SNiP KR 23-01:2013 "Building Heat Engineering (Heat Protection of Buildings)". (2013). [https://www.energoreestr.kg/sites/default/files/documents/СНиП-Тепловая-защита-зданий\\_2013\\_RUS.pdf](https://www.energoreestr.kg/sites/default/files/documents/СНиП-Тепловая-защита-зданий_2013_RUS.pdf)

Though Kyrgyz SNiP KR 23-01:2013<sup>38</sup> does not oblige using exclusively light colors, it includes a table where the absorption coefficients of solar radiation depending on the color and material are considered. Thus, for example, the light blue plaster absorbs only 0.2 while the dark gray or terracotta plaster absorbs 0.7 which means that the first one reflects a significant amount of solar radiation, reducing the heat absorbed by the facade and minimizing heat transfer into the building's interior. Therefore, in terms of thermal insulation, using light-colored paints with lower absorption coefficients can be more beneficial in reducing heat gain and improving energy efficiency.

### 3.5.4. Materials

The materials also play a crucial role when defining the thermal performance of the building. Therefore, the product's "thermal transmittance" (also known as the U-value) measured in W/m<sup>2</sup>K should be considered when choosing a material. The lower the U-value of a material, the better it is at keeping the indoor temperature comfortable even when there are big temperature changes outside.<sup>39</sup> The U-value is not a constant value, therefore it is calculated as follows:<sup>40</sup>

- » The initial stage involves determining the thermal resistance denoted by the symbol R and measured in m<sup>2</sup>K/W using the following formula:

$$R=d / \lambda$$

where d is the thickness of the material layer, expressed in meters, and (lambda), measured in W/mK, is the thermal conductivity coefficient of the material.

- » The next step is to calculate the overall heat transfer coefficient by using the following formula:

$$R1= R+Rsi+Rse$$

where Rsi is the heat transfer coefficient outside, and Rse is a coefficient of heat transfer from the inside.

- » The last step to calculate the heat transfer coefficient (U-value) is to use the formula:

$$U=d / R1$$

where d is the thickness of the wall or partition, expressed in meters, and R1 is total thermal resistance.

Thus, both the (lambda) coefficient and the thermal resistance (R) play a vital role in the thermal protection of buildings. The value of the (lambda) coefficient indicates how much heat the material can pass through itself. The lower the value of the (lambda) coefficient, the lower the material's conductivity; therefore, it is better insulated from heat losses. This means that more heat will pass through a substance with a higher thermal conductivity under the same conditions.<sup>41</sup> The R-value indicates how well the material resists heat transfer at a specific thickness. Good insulation will have a higher R-value, indicating it is better at reducing heat loss.<sup>42</sup>

38. Code of Rules for Design and Construction SP 23-101-2013 "Thermal Protection Design for Buildings". (2013). [https://energoreestr.kg/sites/default/files/documents/C03-Тепловая\\_защита\\_зданий\\_2013\\_RUS.pdf](https://energoreestr.kg/sites/default/files/documents/C03-Тепловая_защита_зданий_2013_RUS.pdf)

39. United Nations Environment Programme (2021). A Practical Guide to Climate-Resilient Buildings & Communities. Nairobi. <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/36405/Adapbuild.pdf>

40. What is heat transfer coefficient and how to calculate it. (n.d.). <https://vedio.com/qa/chto-takoe-koeffitsient-teplotopredachi-i-kak-ego-rasschitat/#:~:text=Рассчет%20коэффициента%20теплопередачи&text=Для%20его%20расчета%20используется%20формула,%20-%20это%20коэффициент%20теплопроводности%20материала>

41. Ibid

42. What are U-values, R-values and Lambda Values? (n.d.). <https://www.kingspan.com/gb/en/knowledge-articles/what-are-u-values-r-values-and-lambda-values/>



Kyrgyz building codes address all three topics discussed: ( $\lambda$ ) coefficient, thermal resistance ( $R$ ), and the  $U$ -value.

Exponents of ( $\lambda$ ) coefficient of different materials are incorporated in Annex B of SP 23-101-2013<sup>43</sup>. They are divided into three groups:

- thermal insulation materials, composed of construction mortars, backfills, slabs made from natural organic and inorganic materials, mineral wool, fiberglass, foam glass, gas glass, and polymer materials.
- structural and thermal insulation materials, composed of wood and products made from it, brickwork made of solid and hollow bricks, concrete on natural and artificial porous aggregates, and cellular concrete.
- structural materials, composed of metals and glass, roofing materials, waterproofing, facing and rolled floor coverings, natural stone cladding, as well as concrete and mortars.

Based on it, the appropriate selection of materials for construction projects can be made by considering their specific thermal properties. Basic thermal resistance ( $R$ ) values are defined regarding the building envelope in SNiP KR 23-01:2013<sup>44</sup> for external walls, non-attic coverings, and attic floors, overlapping over passages and cold undergrounds and cellars, windows and balcony doors and lanterns and varies and depend on the degree-days of the construction area. The same document also contains the general  $U$ -value ( $K_{mtr}$ ) aiming to determine the overall heat transfer coefficient of the building.

Nevertheless, it does not contain the threshold on  $U$ -value indicators, unlike Kyrgyz 2012 Regulations on the Procedure for Energy Certification of Buildings,<sup>45</sup> which define minimum requirements for the heat transfer coefficient of building envelopes. Therefore, the  $U$ -value applicable to exterior walls or pitched roofs with a slope exceeding 45 degrees shall be 0.32 W/m<sup>2</sup>K, while for flat roofs or pitched roofs with a slope below 45 degrees and without attics, it shall be 0.2 W/m<sup>2</sup>K. In the case of roofs with attics, the  $U$ -value should be 0.25 W/m<sup>2</sup>K<sup>46</sup>.

In conclusion, thermal adaptation and the use of appropriate materials are essential in achieving thermal comfort and energy efficiency in buildings. Kyrgyz building codes cover the thermal adaptation topic, providing detailed guidelines on the use of vapor barriers, façade glazing, and paint, as well as the selection of materials based on their thermal properties. By adhering to these standards, developers can ensure that constructions are well-insulated, energy-efficient, and suited to the local climate. This comprehensive approach promotes sustainable building practices, enhances occupant comfort, and supports the long-term durability and resilience of structures in Kyrgyzstan.

43. Code of Rules for Design and Construction SP 23-101-2013. (2013). [https://energoreestr.kg/sites/default/files/documents/СП-Тепловая-защита-зданий\\_2013\\_RUS.pdf](https://energoreestr.kg/sites/default/files/documents/СП-Тепловая-защита-зданий_2013_RUS.pdf)

44. Kyrgyz SNiP KR 23-01:2013 "Building Heat Engineering (Heat Protection of Buildings)". [https://www.energoreestr.kg/sites/default/files/documents/СНиП-Тепловая-защита-зданий\\_2013\\_RUS.pdf](https://www.energoreestr.kg/sites/default/files/documents/СНиП-Тепловая-защита-зданий_2013_RUS.pdf)

45. Regulations on the Procedure for Energy Certification of Buildings. (2012). <http://cbd.minjust.gov.kg/act/view/rus/93706>

46. Aga Khan Development Network Green Building Checklist: New Construction (September 2021) defines the following  $U$ -value indicators for: walls (0.12-0.15), floor (0.08-0.12), roof (0.10-0.12), windows (0.8-1.0, triple glazing) and external doors (1.0-1.2).

## 4. Conclusion

An analysis of Kyrgyz building codes utilizing the UN-Habitat and UN Environment Programme methodologies demonstrated both a high degree of compliance with global standards and room for certain improvement.

Thus, an examination of building codes from the regulatory standpoint has revealed that while most building codes have been updated, some still require comprehensive revision and modernization to align with contemporary best practices and address emerging challenges. By updating the codes that govern the topic of roofs, it can be ensured that buildings are not only compliant with current safety standards but also adaptable to future needs and innovations in construction technology. Also, this will streamline the regulatory process, making it more efficient for architects, engineers, and developers to navigate and comply with standards that are clear, consistent, and reflective of the latest research and industry advancements.

Another aspect to consider is to allow flexibility in building code application at the local level to accommodate regional or local conditions while maintaining national standards. This approach can enhance the adaptability of building regulations to diverse geographical and environmental contexts within Kyrgyzstan, for example by considering factors such as varying climatic zones, topographical features, and traditional building practices unique to different regions. In regions with colder climates, such as high-altitude areas or those prone to severe winters, local adaptations could emphasize thicker insulation requirements or specific types of reflective roofing materials that maximize heat retention and minimize energy loss.

This tailored approach not only enhances energy efficiency but also ensures that buildings remain comfortable and resilient in harsh winter conditions. Conversely, in warmer regions characterized by hot summers, local building codes could prioritize cooling strategies such as enhanced attic ventilation or the use of high-albedo roofing materials that reflect solar radiation. By reducing heat absorption, these measures help mitigate urban heat island effects and lower cooling demands, thereby improving indoor comfort and reducing energy consumption during peak summer months. While some Kyrgyz building codes provide suggestions based on the climatic areas, dividing those preferable to certain areas into unified documents is still recommended.

The introduction of provisions that encourage the use of locally available materials in Kyrgyz building construction should also be considered to reduce environmental impact, support local economies, preserve cultural heritage, and enhance the resilience and cultural identity of communities across Kyrgyzstan. Promoting the use of locally available materials in building construction can reduce the environmental footprint associated with the transportation and manufacturing of construction materials. This supports Kyrgyzstan's commitment to environmental sustainability by minimizing carbon emissions and energy consumption throughout the construction process.



Moreover, utilizing local materials contributes to the economic development of communities by creating demand for indigenous resources and traditional craftsmanship. This can stimulate local economies, generate employment opportunities, and empower communities to participate actively in sustainable development initiatives. Preserving cultural heritage is another significant benefit of integrating locally sourced materials into building codes. Traditional building techniques and materials reflect centuries of adaptation to local environmental conditions and cultural practices. Incorporating these elements into modern construction not only respects cultural identity but also reinforces community pride and historical continuity. Furthermore, by incentivizing the use of locally available materials through regulatory provisions and guidelines, building codes can foster innovation in sustainable construction practices tailored to Kyrgyzstan's diverse geographical and climatic regions. This includes adapting traditional knowledge to contemporary building standards, ensuring that new constructions are both environmentally friendly and resilient to local environmental challenges.

Finally, it is crucial to establish tailored guidelines and incentives aimed at promoting affordable and social housing initiatives in Kyrgyzstan. This entails setting clear technical specifications for low-cost housing, encompassing suitable materials, construction techniques, and design norms. Introducing financial assistance programs and expediting approval procedures will additionally streamline the realization of housing projects that directly address the population's housing demands.

As for the climate perspective, Kyrgyz building codes extensively cover the discussed topics, albeit requiring minor adjustments. Therefore, it is advisable to incorporate provisions for window shading in the forthcoming draft of the building code for multi-apartment residential buildings.

This should encompass various types of shading solutions such as on-glass, on-window-frame, or external mechanisms like overhangs, blinds, stationary and mobile sun protection grilles, shade canopies, or elements for vertical gardening. Implementing these measures will effectively manage solar exposure, enhance energy efficiency, and contribute to reducing energy consumption for both cooling in summer and heating in winter. This approach will also improve indoor comfort and bolster the overall sustainability of residential constructions in Kyrgyzstan.

However, although most criteria address climate change responsiveness to a certain extent, it is recommended to establish requirements that mandate the use of, for example, light colors exclusively for façade paint and only reflective surfaces for roofs in Kyrgyzstan. This approach ensures that every construction project contributes uniformly to mitigating climate impacts and promoting sustainability in Kyrgyzstan. Implementing these requirements across different building codes not only enhances environmental resilience but also fosters a standardized approach to energy efficiency and thermal comfort in buildings. This unified effort will ultimately lead to more resilient communities and a healthier built environment for future generations.

## 5. Annex

During the workshop held on June 14th, 2024, in Bishkek, Kyrgyzstan, the participants were asked about the applicability of the Order of the State Agency for Architecture, Construction and Housing and Communal Services "On Measures to Create a Favorable Investment Climate" dated 05.06.2024.<sup>47</sup> This order establishes the procedure according to which the application of foreign regulatory documents in the field of construction of six countries (Japan, the People's Republic of China, the Republic of Korea, the Russian Federation, the United Kingdom, the United States of America) and the European Union are permitted on the territory of the Kyrgyz Republic simultaneously with national regulatory documents. This order establishes the Interdepartmental Technical Council, whose competencies include, among others, a review of design documents prepared on the basis of foreign regulatory documents in the field of construction.

UN-Habitat h has shared its perspective on the potential challenges in applying such building standards. One of the primary concerns is the lack of approved online resources where up-to-date building codes can be easily accessed. This gap not only limits access to essential information but also creates barriers for professionals who need reliable references to ensure compliance with these standards. Another significant challenge is the absence of approved translations of these codes into Kyrgyz and/or Russian. Without clear and accurate translations, many local stakeholders, including builders, engineers, and policymakers, struggle to fully understand the technical details.

This lack of understanding can lead to misinterpretations, errors in implementation, and ultimately, compromises in the safety and effectiveness of construction projects. Moreover, there is no established procedure for verifying the validity of building codes. This oversight raises concerns about the authenticity and applicability of the standards being used. Without a formal verification process, outdated or incorrect codes might be applied, leading to safety risks, structural deficiencies, and increased maintenance costs.

Climatic differences also present a major obstacle. The proposed norms may not be fully consistent with the local climatic conditions, which vary significantly across regions. An incorrect choice of materials or construction methods due to these inconsistencies can result in structures that are not properly adapted to the environment, leading to increased maintenance costs and potential safety hazards. Geological and seismic differences further complicate the situation.

<sup>47</sup> [https://gosstroy.gov.kg/index.php/ru/state\\_program/download-pdf/prikazgosstroiaot05062024gno70nps70cua1-256661305858d5e6.82641895.pdf](https://gosstroy.gov.kg/index.php/ru/state_program/download-pdf/prikazgosstroiaot05062024gno70nps70cua1-256661305858d5e6.82641895.pdf)









**URBAN LAB**



# Naryn

Kyrgyz Republic

2023-2024

Enhancing Resilience through Integrated Spatial and Investment Planning

## Analysis Of Kyrgyz Legislation

using the UN-Habitat Urban Law and Climate Change Toolkit



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation



## Enhancing Resilience through Integrated Spatial and Investment Planning

### Analysis of Kyrgyz Legislation using the UN-Habitat Urban Law and Climate Change Toolkit

© 2024. Aga Khan Agency for Habitat (AKAH)  
United Nations Human Settlements Programme  
(UN-Habitat)

United Nations Human Settlements Programme  
P.O. Box 30030, 00100 Nairobi GPO KENYA  
Tel.: 254-020-7623120  
www.unhabitat.org

#### Disclaimer

Material in this report does not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or regarding its economic system or degree of development. The analysis, conclusions and recommendations of this publication do not necessarily reflect the views of the United Nations Human Settlements Programme or its Governing Council or its member states.

Reference in this publication of any specific commercial products, brand names, processes, or services, or the use of any trade, firm, or corporation name does not constitute endorsement, recommendation, or favouring by UN-Habitat or its officers, nor does such a reference constitute an endorsement of UN-Habitat.

#### UN-Habitat Urban Lab

Laura Petrella (Chief Planning, Finance and Economy Section)  
Lennart Fleck (Chief Planning and Design Technical Lead)  
Pinar Caglin (Project Manager, Planning and Design Technical Lead)  
Lennart Fleck (Finance and Economy Team Lead)  
Anne Amin (Governance and Legislation Team Lead)

#### Main Authors

Anna Kvashuk  
Aigul Alymkulova

#### Review

Samuel Gachohi Njuguna  
Christiana Sullivan

#### Layout Design & Graphics

Annesofie Sharon Achera Misiani  
Jagnoor Hunjan  
Maia Smillie

#### AKDN, Project Mangement Unit

Surekha Ghogale (Senior Advisor)  
Omurbek Ibraev (Project Manager)  
Nurbek Omurzakov  
Aizaada Bekboeva  
Salamat Ismakeeva

#### Aga Khan Agency for Habitat

Aziz Husein (Head of Sustainable Built Environment and Capital Projects)  
Kira Intrator (Head of Planning and Innovation)

And with thanks to all who participated in meetings, field trips and working sessions from the government, service providers, AKAH, AKDN, UCA and inhabitants of Naryn.



AGA KHAN DEVELOPMENT NETWORK



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation





# Contents

<b>1. Introduction</b>	<b>1</b>
<b>2. Chapter 1: Governance Framework for Urban and Climate Planning</b>	<b>3</b>
<b>3. Chapter 2: Urban and Territorial Planning</b>	<b>20</b>
<b>4. Chapter 3: Urban Planning and Design for Adaptation</b>	<b>32</b>
<b>5. Chapter 4: Urban Planning and Design for Mitigation</b>	<b>62</b>
<b>6. Chapter 5: Economic and Non-Economic Instruments for Climate-Friendly Urban Planning</b>	<b>77</b>
<b>7. Conclusions</b>	<b>86</b>

## List of Terminology and Acronyms

**aiyl** – village

**aiyl aimak** – rural administrative-territorial unit consisting of one or more aiyls (villages)

**aiyl okmotu** – village administration

**EIA** – Environmental Impact Assessment

**GDP** – Gross Domestic Product

**GHG** – Greenhouse gasses

**kenesh** – council

**LCCTK** – Law and Climate Change Toolkit

**local state administration bodies** = органы местной государственной администрации

**local self-government bodies or local government bodies (under UN-Habitat terminology)** = органы местного самоуправления

**NCs** – National Communications

**NUA** – New Urban Agenda

**oblast** – administrative-territorial unit of the 1st tier

**PPP** – Public-Private Partnerships

**rayon** – administrative-territorial unit of the 2nd tier

**SEA** – Strategic Environmental Assessment

**UNECE** – United Nations Economic Commission for Europe

**UNDP** – United Nations Development Programme

**UNFCCC** – United Nations Convention on Climate Change

**USSR** – the Union of Soviet Socialist Republics

**WHO** – World Health Organization

# Introduction

Kyrgyzstan, located in the heart of Central Asia, is characterized by its towering mountains, most notably the majestic Tian Shan range. This mountainous terrain is bestowed with breathtaking natural beauty, but it also presents a unique set of challenges and opportunities for the landlocked country. With approximately 94% of its territory situated more than 1,000 meters above sea level, the country's geographical features contribute to its susceptibility to the impacts of climate change, including rising temperatures, shifting precipitation patterns, and glacial melt. These changes particularly impact vital water resources used for agriculture and hydropower, potentially creating significant challenges related to food and energy security.

However, despite the challenges posed by climate change, Kyrgyzstan's mountainous landscape also positions it as a significant player in global discussions on climate resilience. The country's glaciers serve as key indicators of broader climate trends, drawing attention to the urgent need for sustainable approaches to development and adaptive strategies. For these reasons, the adoption of sustainable development practices has become imperative as Kyrgyzstan navigates the intricate interplay between the climate risks

and opportunities posed by its mountainous geography. By embracing adaptive strategies tailored to its unique natural features, Kyrgyzstan can mitigate the adverse effects of climate change while harnessing the potential of its natural resources for the benefit of its people and the broader global community.

As can be seen, climate change is a cross-cutting topic affecting diverse development issues in Kyrgyzstan, among which urban planning stands prominently. Addressing these challenges requires a comprehensive approach to urban planning and urban law, integrating climate resilience into legal frameworks and planning processes. Thus, this report identifies opportunities to make urban planning frameworks more resilient to climate change by analyzing Kyrgyz legislation using the Urban Law Module of the Law and Climate Change Toolkit<sup>1</sup> (hereinafter referred to as "Urban Law Module of the LCCTK"), which was developed by UNEP and UN-Habitat to guide the analysis of urban legal frameworks with respect to climate action. The toolkit is composed of the following five analytical areas: (1) governance framework for urban and climate planning, (2) urban and territorial planning, (3) urban planning and design for adaptation, (4) urban planning and design for mitigation, and (5) economic and non-economic instruments for climate-friendly urban planning.<sup>2</sup>

The chapters, sections and subsections of this report are aligned with the structure of the Urban Law Module of the LCCTK and serve as the benchmarks against which the effectiveness and adequacy of existing frameworks and practices are evaluated. They provide a nuanced lens for identifying strengths, gaps and opportunities in the existing Kyrgyz legal framework, thus facilitating the development of targeted recommendations for advancing climate-responsive urban planning practices. The recommendations that are found at the end of each chapter derive from the aforementioned legislative gap analysis and offer actionable insights for refining and enhancing Kyrgyz legislation related to urban planning in the context of climate change. The report finishes with a set of conclusions that indicate the overall degree of alignment between Kyrgyz legislation and the criteria outlined in the Urban Law Module of the LCCTK.

1. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

2. Ibid

In addition to the overarching recommendations found in each chapter of the report, tailored recommendations for the local context of Naryn are also incorporated into the report with a view to effectively addressing the town's specific development needs and challenges. These context-specific recommendations build upon UN-Habitat's prior analysis of Kyrgyz local governance and legislation found in the Naryn Town Profile Report prepared in 2023-2024. Thus, through the inclusion of analysis and recommendations adapted to Naryn's context, this report contributes to an ongoing discourse on building resilience and sustainability in Kyrgyzstan's urban development landscape that is directly applicable to the lives of Naryn town residents.

The document also references the feedback from seven participants of the workshop held on June 14<sup>th</sup>, 2024, in Bishkek, Kyrgyzstan. These participants included representatives from national authorities and local self-government involved in urban planning, municipal property, architecture, economy, finance, legislation, environment, energy efficiency, capacity building, as well as land resources, cadastre, geodesy, and cartography.

By leveraging the insights gained from the analysis found in this report, UN-Habitat seeks to provide valuable guidance for the evolution of Kyrgyz

legislation in a way that will align urban planning with climate action imperatives. The development of urban law frameworks that are responsive to climate change will ultimately steer Kyrgyzstan towards a more sustainable and resilient path for urban development in line with objectives set by Sustainable Development Goals 11 ("sustainable cities and communities") and 13 ("climate action").



A landscape photograph of a town in Naryn, Kyrgyzstan. In the foreground, there is a dry, brown field with some small green plants. A few young trees are planted in rows. In the middle ground, there is a town with several buildings, including a large yellow house with a dark roof and a red-roofed building. In the background, there are rolling hills and mountains, some with snow. A large pine branch hangs from the top of the frame. The sky is overcast with grey clouds.

# **Chapter 1 : Governance Framework for Urban and Climate Planning**

# 1. Chapter 1. Governance Framework for Urban and Climate Planning

This chapter examines the multi-level governance system of Kyrgyzstan, which is marked by intergovernmental cooperation across different levels of government as well as amongst diverse public entities within the same level of government. The chapter also analyzes stakeholder participation in urban governance structures and emphasizes the importance of engaging various actors in urban decision-making processes that contribute to responsive climate governance. Furthermore, data collection and sharing among public agencies is assessed, as is the dissemination of this information to the public to promote effective climate governance. The chapter concludes with a set of recommendations aimed at strengthening the legislative framework for climate-resilient urban governance in Kyrgyzstan.

## 1.1. Multi-Level Institutional Coordination

### 1.1.1. Vertical Inter-Institutional Coordination

Ensuring coherence and coordination between national and sub-national governments is essential for effective climate governance and sustainable development. Intergovernmental coordination is essential to finding integrated solutions for complex challenges that extend beyond geographical boundaries. Such coordination can be achieved through both formal, institutionalized measures, such as legal obligations, as well as through informal mechanisms, such as establishing forums for policy exchange, which incentivize governments to align and coordinate their actions. While the Kyrgyz urban law framework broadly mandates “*interaction between executive authorities and local self-government bodies*,”<sup>3</sup> it lacks specific details on roles and responsibilities for these institutional actors, creating ambiguity when it comes to implementation. Thus, specific legislative provisions that outline clear modalities for collaboration, establish structured coordination mechanisms, and define the roles and responsibilities of different levels of government in terms of interaction should be introduced.

### 1.1.2. National Inter-Institutional Coordination

Inter-institutional coordination among national-level institutions such as line ministries is essential to fostering a cohesive and efficient approach to governance. Horizontal coordination at this level ensures that diverse perspectives and expertise are integrated into decision-making processes, promoting holistic and well-informed national policies, plans and strategies. It facilitates the alignment of goals and strategies across various sectors, contributing to the overall coherence and success of governance instruments at the national level. Horizontal coordination can be enhanced by enacting specific legal provisions that mandate collaboration among centralized ministries, as well as by creating financial incentives for communication and coordination, and by establishing informal mechanisms such as policy exchange forums.

3. Based on the information from the Regulations “On the State Agency for Architecture, Construction and Housing and Communal Services”. (2021). <https://cbd.minjust.gov.kg/158345?cl=ru-ru> and Regulations “On the Ministry of Natural Resources, Ecology and Technical Supervision”. (2021). <https://cbd.minjust.gov.kg/158727>

In Kyrgyzstan, the laws that contain the mandates of institutions working on urban development and environmental preservation, such as the State Agency for Architecture, Construction and Housing and Communal Services<sup>4</sup> and the Ministry of Natural Resources, Ecology, and Technical Supervision<sup>5</sup> enshrine the broad obligation to “interact with other executive authorities of the Kyrgyz Republic”. While this provides a good overarching obligation, these laws fail to establish any structured mechanisms for effective coordination and collaboration amongst authorities at the national level. However, a resolution issued in 2013 has enabled institutions with interconnected functions to adopt a model regulation for the implementation of these functions.<sup>6</sup> This facilitates the formation of collaborative interagency working groups to address interconnected tasks.

Thus, although there are possibilities for line ministries to collaborate, the Kyrgyz legal framework needs to establish clear and concrete provisions outlining the modalities of interaction, delineating responsibilities, and supporting channels of regular communication between national ministries. Additionally, incorporating measures such as temporary or permanent joint task forces, periodic review meetings,

and knowledge-sharing platforms can further enhance the efficacy of collaboration amongst national-level institutions in Kyrgyzstan. This will ensure a more systematic and well-coordinated approach to governance that will be critical for the alignment and collective success of national initiatives related to climate change.

### 1.1.3. Metropolitan Inter-Jurisdictional Coordination

A “metropolis” is defined as a city and its commuting zone, which consists of suburban, peri-urban and rural areas economically and socially linked to the city. Local jurisdictions within a metropolis tend to have strong territorial interdependencies (ranging from economic, social, and environmental) notwithstanding their administrative boundaries. For this reason, it is essential that these interdependencies are managed in an integrated way through coordination among local jurisdictions that belong to the same metropolitan area. The legal framework can promote such cooperation by requiring municipalities to coordinate planning across municipal borders when it is expedient to do so. In Kyrgyzstan, there are two cities – Bishkek and Osh – that fall under the category

of “metropolis”. However, there are no legal provisions that facilitate the coordination of administratively independent jurisdictions within the same metropolitan area.<sup>7</sup>

### 1.1.4. Urban-Rural Coordination

Administrative boundaries should not get in the way of constructive collaborations between urban and rural areas where there are sufficient linkages and there is need for coordinated approaches. In Kyrgyzstan, however, administrative boundaries play a decisive role in the distribution of jurisdictional responsibilities and limit coordination between cities and *ayil aimaks* (rural administrative-territorial units consisting of one or more *ayils* (villages) that share common economic, social, or environmental functional territories).

4. Regulations “On the State Agency for Architecture, Construction and Housing and Communal Services”. (2021). <https://cbd.minjust.gov.kg/158345?cl=ru-ru>

5. Regulations “On the Ministry of Natural Resources, Ecology and Technical Supervision”. (2021). <https://cbd.minjust.gov.kg/158727>

6. Resolution No. 404 “On Approval of the Model Regulations for the Interaction of State Executive Authorities in the Implementation of Related Functions”. (2013). [https://www.gov.kg/index.php/ru/p/sa\\_ministries\\_departments\\_interaction](https://www.gov.kg/index.php/ru/p/sa_ministries_departments_interaction)

7. Article 6 of the Law “On the Status of the Capital” No.218. (2013) <https://cbd.minjust.gov.kg/205092/edition/977645/ru> and Article 6 of the Law “On the Status of Osh city” No.219. (2013) <https://cbd.minjust.gov.kg/205093/edition/970144/ru>



Therefore, it is recommended to introduce legal provisions to facilitate collaboration and coordination between *aiyl aimaks* and their neighboring cities.

### 1.1.5. Local Inter-Institutional Coordination

Horizontal coordination is also needed to align the work of line departments at the local level, including those responsible for housing, infrastructure, urban planning, environment, natural resources, and energy and utilities. These departments must operate in a coordinated and coherent manner to ensure that urban climate governance is effectively integrated into sectorial policies and practices at the local level. In Kyrgyzstan, however, there are currently no legal provisions mandating horizontal coordination among line departments at the local level, which results in a lack of coherence and collaboration in urban governance. This gap in coordination hampers the effective functioning of local self-governance structures, leading to fragmented efforts in achieving common goals.<sup>8</sup>

## 1.2. Participatory Governance

Active stakeholder participation is integral to effective urban governance: it enhances the quality of policy, plan and strategy proposals; it ensures that local government initiatives genuinely align with community needs; and it increases compliance through increased transparency and strengthened stakeholder involvement. In the Kyrgyz Republic, governance is founded on the principle of complete authority vested in the people, safeguarding individual rights, ensuring citizens' freedoms, and allowing unrestricted access to information on the management of state and societal affairs.<sup>9</sup>

Therefore, citizens of Kyrgyzstan hold power to initiate legislative action through an advocacy group, which submits applications to the Ministry of Justice for draft law registration.<sup>10</sup> In the context of legislative proposals, citizens can express opinions during committee sessions for the second reading and preparation of draft laws. They can also track legislative updates on the official government website ([www.kenesh.kg](http://www.kenesh.kg)) and engage with deputies. Additionally, citizens have the ability to virtually participate in public discussions on draft legislative acts via the digital "Unified Portal for Public Discussions

of Draft Legislative Acts" (<http://koomtalkuu.gov.kg>), which was established as part of the National Action Plan for an Open Government in the Kyrgyz Republic (2018-2020). In the field of urban planning, Kyrgyz legislation mandates the organization of public hearings for the discussion of draft urban plans,<sup>11</sup> which will be further analyzed in the subsections below.

### 1.2.1. Identification of Stakeholders and Communities

Accurate and inclusive stakeholder identification is crucial for the success of any consultative process. It ensures that the views of minority or marginalized groups are heard, and it can prevent the interests of local elites from dominating forums for collective decision-making. In Kyrgyzstan, every community member has the right to partake in public hearings to discuss draft urban planning documents. The 2018 Regulations on Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic specifically guarantees the right to all interested members of the public as well as civil society organizations and associations.

8. This information is based on the absence of legislative provisions and the interviews conducted in Naryn Town in October 2023.

9. Article 2 of the Constitution of the Kyrgyz Republic. (2021). <https://www.gov.kg/ru/p/constitution>

10. Ubysheva, A. (2021). Civic Engagement and Lawmaking in the Kyrgyz Republic. [https://www.icnl.org/wp-content/uploads/ICNL-Legislative-Engagement-Guidelines-RUS\\_28-Dec-2021\\_final.pdf](https://www.icnl.org/wp-content/uploads/ICNL-Legislative-Engagement-Guidelines-RUS_28-Dec-2021_final.pdf)

11. Regulations on Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic. (2018). <http://cbd.minjust.gov.kg/act/view/ru-ru/200210>



It also enables stakeholders from the public sector, such as the district government administration, mayors' offices of national or regional significance, and "government bodies responsible for decision-making", to participate in public hearings, as can the media.<sup>12</sup> These provisions facilitate diverse and inclusive engagement that captures the perspectives of various segments of society. Not only does it promote community ownership of urban development initiatives, but it also contributes to the legitimacy and credibility of decision-making outcomes. By ensuring that the views and concerns of different stakeholders are considered, the law contributes to a more balanced and representative urban planning process that aligns with the needs and aspirations of the entire community.

### **1.2.2. Opportunities for Participation**

While Kyrgyz law promotes inclusive stakeholder participation, the opportunities for participation in urban planning processes are more limited. Public participation is restricted to conducting public hearings and collecting stakeholder comments on draft urban planning documents that have already been finalized, which prevents stakeholders' from offering inputs during the early development of planning instruments.<sup>13</sup> Participation of this

nature limits the impact that stakeholders can have on the development of urban planning instruments. Moreover, it can act as a superficial or symbolic opportunity for public input, which meets the formal requirements of the law without genuinely offering communities and other pertinent stakeholders a platform to meaningfully express their views for sincere consideration. The formal adherence to legal requirements without providing substantial avenues for input not only hinders the effectiveness of the public participation process, but also diminishes the legitimacy of urban planning decisions. To foster genuine community engagement, legal provisions need to be modified to expand the opportunities for public participation beyond the late stages of the planning process to ensure that early input from stakeholders and community members can inform urban planning decisions and uphold a genuinely robust and inclusive decision-making process in urban planning matters in Kyrgyzstan.

### **1.2.3. Consideration of Specific Community Needs**

Public hearings and invitations for written comments are necessary, but not always sufficient to ensure that community and stakeholder needs are properly considered in the urban planning

process. For this reason, it is recommended that community needs be preliminarily studied and assessed during the initial phases of developing the urban planning instruments. Community involvement of this nature should start from the preparatory steps of urban planning documentation development. Such early engagement allows for a thorough understanding of a community's unique requirements, preferences, and concerns based on their specific cultural, spatial and socio-economic conditions. Legal requirements that integrate public participation into the data collection stage of urban planning ensure that the process is rooted in the actual needs and aspirations of the community, fostering a more responsive and inclusive approach to development. This proactive engagement not only enhances the quality of urban planning outcomes, but also builds a sense of ownership among community members, creating a more sustainable and harmonious urban environment.

<sup>12</sup>. Paragraph 6 of Regulations on Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic. (2018). <http://cbd.minjust.gov.kg/act/view/ru-ru/200210>

<sup>13</sup>. As defined in Chapter 3 of the Naryn Town Profile.

However, in Kyrgyzstan, public involvement currently occurs only at the final stages of urban planning documentation development, and it is limited to providing comments post-factum on draft urban planning instruments.<sup>14</sup> This delayed engagement restricts the potential for a comprehensive understanding of community needs. In order to ensure a more effective and inclusive urban planning process, it is recommended that the law extends public participation to the initial steps of urban plan development by requiring a community needs assessment. By pre-identifying community needs and integrating them in urban planning documents, urban planning authorities in Kyrgyzstan can enhance the overall quality of urban planning outcomes, instill a sense of ownership among community members, foster stewardship, and contribute to creating a more sustainable and harmonious urban environment.

#### **1.2.4.Stakeholders and Community Feedback**

Gathering input from the community is essential, but accurately incorporating this feedback into the final urban planning output is equally significant. When suggestions or demands from stakeholders and community members are not accepted, it is

crucial for those responsible to provide valid and transparent justifications for their decisions. This ensures a transparent and accountable decision-making process that upholds the principles of community engagement and promotes trust in the public participation and overall urban planning process.

In Kyrgyzstan, the public hearings and their outcomes are documented as a matter of protocol and signed by the chairman and the secretary to attest to their veracity. The protocol includes all received suggestions and comments and the results of their consideration. This ensures that the community's input is duly acknowledged, even if not all suggestions are accepted. Moreover, it forces authorities to provide a clear and transparent rationale for the decisions made in accepting or refusing public feedback. This commitment to transparency reinforces the principles of meaningful community engagement.

#### **1.2.5.Access to Dispute Resolution Mechanisms**

Given the intricate nature of urban planning decisions, the involvement of a multitude of stakeholders with divergent interests, and the potential ramifications of planning decisions on proprietary interests and local conditions,

conflicts are prone to emerge during or following urban planning processes. Consequently, it is imperative to integrate mechanisms for dispute resolution and appeals, complete with clearly delineated timelines and associated costs, to address the concerns of affected individuals and communities. In Kyrgyzstan, the Law "On the Basics of Urban Planning Legislation"<sup>15</sup> states that disputes related to urban planning activities are resolved through administrative or judicial procedures, while disputes concerning the compensation of damages between subjects of urban planning legal relations are settled solely through judicial proceedings. Nonetheless, the absence of a comprehensive and detailed legal framework or provisions elaborating the timelines, procedures and costs for appeals and dispute resolution poses a significant challenge to those seeking to appeal urban planning decisions or those in need of dispute resolution services for disputes related to urban planning decisions.

<sup>14</sup>. No assessment of community needs is mentioned in Annex 7 "Primary Requirements for the Initial Data for the Development of a District Planning Scheme, and the Master Plan for Popular Points" of SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

<sup>15</sup>. Paragraph 18 of the Law of the Kyrgyz Republic "On the Basics of Urban Planning Legislation of the Kyrgyz Republic" (2011). <http://cbd.minjust.gov.kg/act/view/ru-ru/203338?cl=ru-ru>

The vagueness of the current provisions leaves affected parties without clear guidance, potentially prolonging the dispute-resolution process or preventing affected stakeholders from making appeals. This lack of clarity not only hampers the efficiency of resolving disputes but also undermines the transparency and fairness of the urban planning system in Kyrgyzstan.

### **1.3. Data Collection and Sharing**

Effective governance relies on robust data collection and sharing, providing public bodies with the insights needed for informed policy decisions. Particularly crucial for evidence-based governance, data sharing allows the aggregation of information from diverse sources, unveiling new correlations and patterns to address multi-dimensional challenges, such as environmental sustainability, urban planning, social inequality, etc. Simplifying access to data not only reveals linkages that might otherwise go unnoticed, but also accelerates decision-making processes and enhances overall efficiency by reducing search and processing times.

#### **1.3.1. Vertical data collection and sharing**

In the context of data collection and sharing for urban planning and climate change, the legal framework of Kyrgyzstan is not fully established, and, where established, is quite vague. With respect to vertical data collection and sharing (that is, between three levels of government: national, regional and local), Kyrgyz law obliges the State Agency for Architecture, Construction and Housing and Communal Services<sup>16</sup> and the Ministry of Natural Resources, Ecology, and Technical Supervision<sup>17</sup> to “interact with other executive authorities of the Kyrgyz Republic and local self-government bodies”. However, the ambiguity in the wording of the provision fails to explicitly mandate these institutions and local self-government bodies to share data. The same holds true for local state administration bodies and local self-government authorities which, despite being obligated to collaborate closely with one another, lack specific obligations for data sharing.<sup>18</sup>

#### **1.3.2. Horizontal data collection and sharing**

In terms of horizontal data collection and sharing between the State Agency for Architecture,

Construction and Housing and Communal Services and the Ministry of Natural Resources, Ecology, and Technical Supervision, there is no specific obligation to share data. Once again, the vagueness of the obligation to “interact” creates a loophole in the regulatory framework that results in the non-mandatory exchange of data. However, Resolution No. 404 “On Approval of the Model Regulations for the Interaction of State Executive Authorities in the Implementation of Related Functions” (2013) introduced the possibility for two authorities to establish a model regulation in order to carry out related functions. This model regulation would serve as the foundation for exchanging all necessary information as the concerned authorities undertake their related functions.

<sup>16</sup>. Paragraph 3 of the Regulations “On the State Agency for Architecture, Construction and Housing and Communal Services”. (2021). <https://cbd.minjust.gov.kg/158345?cl=ru-ru>

<sup>17</sup>. Paragraph 7 of the Regulations “On the Ministry of Natural Resources, Ecology and Technical Supervision”. (2021). <https://cbd.minjust.gov.kg/158727>

<sup>18</sup>. Article 67 of the Law “On Local State Administration and Local Self-Government Bodies”. (2021). [https://www.gov.kg/ru/p/local\\_state\\_administration](https://www.gov.kg/ru/p/local_state_administration)

### 1.3.3. Local data collection and sharing

As to horizontal data collection and sharing among different cities, rayons, and oblasts in Kyrgyzstan, there is no similar requirement to exchange information between these administrative-territorial units. The absence of such requirements for collaboration and coordination in data collection limits the ability of local governments to share valuable insights and data for comprehensive urban planning and climate change initiatives. Introducing data sharing obligations through legislation would foster a more integrated and synergistic approach to addressing common urban governance challenges.

Similarly, there is no obligation in Kyrgyz legislation for local data collection and sharing among different departments and institutions within the same administrative-territorial unit (city or ayil aimak).

As such, despite the advances that have been made in some areas of the law, there are still substantial gaps in the mandates for vertical and horizontal data exchange in Kyrgyz legislation. These should be addressed by introducing specific obligations for transparent data sharing, which will foster a more integrated approach to urban planning and climate change initiatives. Data collection and sharing across all levels of government are essential to ensure resilient, inclusive, and environmentally sustainable urban development in Kyrgyzstan.

Furthermore, the data collected should be disaggregated as much as possible to take women, youth, marginalized groups, and other vulnerable populations into account and to gain a more nuanced understanding of the diverse needs, challenges, and opportunities amongst members of the population. The disaggregation of data allows for the identification of specific interventions and targeted initiatives that address the unique circumstances faced by different demographic groups. For instance, disaggregated data can reveal disparities in access to basic services, such as healthcare, education and housing, among marginalized communities. It can also shed light on the differential impacts of climate change on vulnerable populations, helping

to prioritize adaptation and mitigation measures where they are most needed.

Moreover, disaggregated data enables a more accurate assessment of progress towards achieving gender equality and social inclusion objectives. It can highlight areas where women, youth, and other marginalized groups face barriers to participation in decision-making processes or lack access to economic opportunities. Therefore, by ensuring that data collection efforts are sufficiently detailed and disaggregated, policymakers can develop more targeted and effective strategies to promote equitable and inclusive urban development. This approach is essential for building resilient communities, reducing inequalities, and advancing sustainable development goals in Kyrgyzstan and beyond.



## 1.4. Local Governments' Mandate for Urban Planning in Urban Areas

### 1.4.1. Local Governments' Clear Institutional Roles and Responsibilities

The principle of subsidiarity stipulates that authority and resources should be at the level of authority that is closest to the people most affected by decisions to ensure effective, appropriate and cost-effective delivery. In the urban context, the closest level is represented by local governments, which perform a variety of functions that may have an impact on climate change mitigation and adaptation. In Kyrgyzstan,<sup>19</sup> the development and implementation of master plans for *aiyl aimak* (an administrative-territorial unit consisting of one or more villages) and cities fall under the jurisdiction of the *aiyl okmotu* (illage administration) and the mayor's office, respectively.<sup>20</sup> Nevertheless, there is a conflict of mandates regarding master plan development,<sup>21</sup> as the State Design Institute of Urban Planning and Architecture, by its charter, is also designated as a developer of master plans<sup>22</sup> and actually performs this function while local self-government acts as a customer meaning it

only orders but not develops the master plans. Such an overlap of functions creates ambiguity in the urban planning process. While local self-governments are legally designated as the developers of urban plans, the practical execution of these functions is, in fact, centralized at the national level. Resolving this conflict of mandates by clearly defining the distinct roles of each entity involved in urban planning, and by exclusively empowering local governments to develop urban planning instruments in line with the principle of subsidiarity, will contribute to a more coherent and efficient urban planning framework, aligned with the broader goals of sustainable and well-coordinated urban development in Kyrgyzstan.<sup>23</sup>

### 1.4.2. Local Government Capacity Building

Capacity building is a critical means of implementing and achieving the development goals linked to urban planning. To empower local self-government bodies and enhance their capabilities, strategic efforts should be directed towards developing and fostering knowledge, skills, and resources at the local level. This involves providing comprehensive training

programs, facilitating knowledge exchange, and establishing collaborative initiatives with relevant stakeholders.

In Kyrgyzstan, the 2021 Law "On the State Civil Service and Municipal Service"<sup>24</sup> uses the language "*improvement of employee qualifications*" to refer to training conducted to enhance the theoretical and practical knowledge, skills, and abilities of employees to effectively carry out their professional responsibilities, including the completion of additional professional educational programs that seeks to improve alignment with international requirements and standards. It is carried out within one group of positions at least once every three years and, upon its completion, participants receive a formal certificate of completion in relevant topic.

19. For a more detailed analysis of the roles and responsibilities of Kyrgyz local self-government with respect to urban planning, see Chapter 3, Naryn Town Profile Report, (2024).

20. Articles 45, 51 of the Law of the Kyrgyz Republic "On Local State Administration and Local Self-Government Bodies." (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112302>

21. see Chapter 3, Naryn Town Profile Report, (2024).

22. Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic. (n.d.). <http://gpi.kg/ru/ustav/>

23. For a more detailed analysis of the roles and responsibilities of Kyrgyz local self-government with respect to urban planning, see Chapter 3 of the Naryn Town Profile Report [insert year and link]

24. Law "On the State Civil Service and Municipal Service". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/112303/10?cl=ru-ru>

Thus, in Kyrgyzstan, capacity building is legally integrated into state civil and municipal services requirements, which underscores the nation's commitment to cultivating a skilled and knowledgeable workforce. By recognizing the importance of updating civil servant competencies and aligning qualifications with international standards, the law not only strengthens the capabilities of local self-government bodies, but also positions the country for sustainable urban development. The legal obligations for civil servants to participate in systematic training programs and undergo periodic certifications promotes continuous improvement and resilience in the face of evolving challenges in the realm of urban planning.

#### **1.4.3. Inter-Municipal Collaboration Beyond Administrative Boundaries for Urban and Infrastructure Planning**

The swift pace of urbanization in various regions across the world has led to urban sprawl with cities haphazardly extend beyond their conventional administrative limits.

This phenomenon has resulted in the formation of human settlements that stretch across two or more municipal areas, creating a scenario where administrative boundaries do not align with functional and morphological realities. This mismatch consequently gives rise to jurisdictional ambiguity and service delivery gaps. To address the challenges posed by this dynamic urban landscape, the legal framework must establish suitable institutional arrangements that facilitate effective urban governance across administrative boundaries in support of climate-responsive urban planning.

However, while the phenomenon of seeking services across administrative boundaries exists in Kyrgyzstan with respect to sectors such as education (attendance of schools in another *ayyl aimaks*<sup>25</sup>) and health (receiving outpatient and/or inpatient services from healthcare facilities that may not target a particular population/area, but which are physically easier to reach), basic services and infrastructure presently serve populations within their administrative boundaries adequately.

Nonetheless, given the persistent challenges of urbanization, the institutional and governance framework related to basic services and urban infrastructure in Kyrgyzstan may need to explore alternative collaboration strategies to prepare for future urban growth. Such strategies could facilitate joint planning and decision-making on designated urban development topics.

### **Recommendations**

The preceding analysis of the Kyrgyz governance framework for urban and climate planning has revealed that some governance mechanisms in Kyrgyzstan align with the requirements of the Urban Law Module of the LCCTK. However, there are also many opportunities to embed and enhance legal provisions for sustainable urban and climate governance. With a view to achieving increased institutional coordination and more coherent urban and climate planning, the following recommendations are provided:

**Strengthening vertical inter-institutional coordination (1.1.1).** To enhance the effectiveness of cooperation between national and local self-governments, it is recommended to introduce specific provisions (e.g. in the Law of the Kyrgyz Republic “On Local State Administration and Local Self-Government Bodies”)<sup>26</sup> that outline clear modalities for collaboration, establish

25. “National Development Program of the Kyrgyz Republic until 2026”, approved by the Decree of the President of the Kyrgyz Republic dated October 12, 2021, sets the administrative-territorial reform under which the number of *ayyl aimaks* will be reduced due to their incorporation with nearby cities.

26. Please note that the recommendations in this section are not limited to the specific law referenced and their application may be interpreted accordingly by local experts.

structured coordination mechanisms, and define the roles and responsibilities of different levels of government both in general and specifically with respect to addressing climate challenges and urban planning.

This approach would provide a more comprehensive and actionable framework for successful urban and climate planning by ensuring that national and local authorities work together seamlessly, share relevant information, and align their strategies both in urban planning and climate change topics.

**Strengthening national inter-institutional coordination (1.1.2).** To strengthen national inter-institutional coordination in Kyrgyzstan, it is recommended to amend existing legislation to include specific and concrete provisions outlining the modalities of interaction among national-level institutions, particularly line ministries such as the State Agency for Architecture, Construction and Housing and Communal Services (urban planning) and the Ministry of Natural Resources, Ecology, and Technical Supervision (climate change). The current broad obligation to “interact with other executive authorities of the Kyrgyz Republic and local self-government bodies” should be refined to incorporate specific, structured mechanisms for effective collaboration.

This may involve detailing responsibilities, establishing regular communication channels, and introducing measures such as joint task forces, periodic review meetings, and knowledge-sharing platforms. By enacting these amendments, Kyrgyz legislation can foster a more systematic and well-coordinated approach to governance, ensuring the alignment of efforts for the collective success of national initiatives in both urban planning and climate change topics.

**Facilitate collaboration and coordination among neighboring cities and aiyl aimaks (1.1.3 & 1.1.4).** It is recommended to introduce provisions in Kyrgyz legislation (e.g., in the Law of the Kyrgyz Republic “On Local State Administration and Local Self-Government Bodies”)<sup>27</sup> that encourage mandatory cooperation among neighboring cities and the aiyl aimaks (an administrative-territorial unit consisting of one or more villages), especially when dealing with matters of common interest. This will ensure a more cohesive and integrated approach to planning and development across administrative divisions, fostering effective collaboration and addressing potential challenges arising from the current lack of mandatory requirements for cooperation.

Moreover, extending such collaboration will also facilitate joint efforts in regional development, resource utilization, and infrastructure planning.<sup>28</sup> This can be achieved by establishing inter-municipal forums or councils where representatives from neighboring cities and aiyl aimaks can discuss shared challenges, exchange ideas, and collectively formulate strategies for sustainable development. Such collaborative mechanisms will not only enhance the overall efficiency of urban and regional planning, but also promote a sense of shared responsibility among diverse administrative units. Additionally, it is essential to establish clear guidelines and incentives within the legal framework to ensure the active participation and commitment of local self-government bodies in these collaborative initiatives. Kyrgyzstan can build a more resilient and interconnected foundation for addressing common development issues and advancing comprehensive territorial development by fostering stronger ties and mandating inter-municipal cooperation.

27. The recommendations in this section are not limited to the specific law referenced and their application may be interpreted accordingly by local experts.

28. Administrative and territorial reforms initiated under the [“National Development Program of the Kyrgyz Republic until 2026”](#), approved by the Decree of the President of the Kyrgyz Republic dated October 12, 2021, are pursuing the same goals and objectives and are expected to improve the overall quality and efficiency of public services and public administration system.

**Enhance local governance through horizontal coordination (1.1.5).** To enhance the effectiveness of local self-governance in Kyrgyzstan, it is recommended to amend existing legislation to introduce specific provisions mandating horizontal coordination among line departments at the local level. Currently, there is no legal requirement for collaboration among departments responsible for housing, infrastructure, urban planning, environment, as well as energy and utilities. To address this gap, the law should stipulate the establishment of formal mechanisms, such as regular coordination meetings, to ensure information exchange and joint decision-making. These amendments would foster a more integrated and efficient approach to addressing local challenges, promoting effectiveness and the alignment of efforts among various departments for more coherent local governance.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024 (1.1.1-1.1.5):** Among the participants from national and local authorities, five agreed that this recommendation is applicable, one viewed it as partially applicable, and one indicated it was beyond their expertise. This feedback suggests that while the majority support the recommendation for mandatory horizontal coordination among local departments, opinions vary regarding its applicability, with some finding it only partially relevant and others lacking the expertise to fully evaluate it.

**Expanding opportunities for public participation (1.2).** To enhance the effectiveness and inclusivity of public participation in urban planning processes in Kyrgyzstan, it is advisable to expand the scope of engagement throughout the entire urban planning process (e.g., by introducing amendments into the Law “On the Basics of Urban Planning Legislation” and the Regulations “On Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic”).<sup>29</sup>

This can be achieved by introducing public participation during the primary data collection phase using community needs assessments to inform the development of urban planning instruments. Proactive stakeholder engagement of this nature not only enhances the quality of urban planning outcomes, but also builds a sense of communal ownership over urban planning decisions and fosters stewardship among community members. Additionally, the law should introduce requirements for authorities to conduct community consultations via public hearings at the initial stages of the planning process in addition to the existing requirement to conduct a public hearing once the planning instrument has been drafted. This type of extended engagement would enable stakeholders to contribute their insights and preferences at crucial stages, from beginning to end of the planning process, ensuring a more comprehensive and authentic representation of community perspectives. By broadening the scope beyond discussions on drafted documentation and fulfilling legal formalities, the law can foster genuine community engagement and strengthen the legitimacy of urban planning decisions.

<sup>29</sup> The recommendations in this section are not limited to the specific law referenced and their application may be interpreted accordingly by local experts.



### **Feedback from the participants of the workshop held on June 14th, 2024 (1.2):**

Among the participants from local authorities, three agreed that this recommendation is applicable, while three participants from national authorities believed it is not applicable due to the existence of a functioning mechanism. Additionally, one local authority participant found the recommendation partially applicable, citing a lack of public awareness. This feedback indicates a division in opinion, with local authorities generally supporting the recommendation, whereas national authorities see it as redundant, and concerns about public awareness highlight the need for broader engagement strategies.

### **Strengthening dispute resolution mechanisms**

**(1.2.5).** It is recommended to amend existing legislation to incorporate comprehensive provisions that address the lack of detail regarding timelines, procedures and costs of appeals and dispute resolution related to urban planning decisions in Kyrgyzstan. This amendment should prioritize the establishment of transparent and equitable mechanisms for resolving conflicts arising from urban planning decisions. Specifically, the legislation should outline explicit timelines for each stage of both the appeal and the dispute resolution process, from initial filing to

final resolution. Additionally, it should incorporate provisions specifying the costs associated with pursuing dispute resolution, including any fees or expenses incurred by affected parties. By integrating these amendments into the legal framework governing urban planning in Kyrgyzstan, the government can enhance accountability for planning decisions, streamline appeal and dispute resolution processes, and promote fairness in resolving disputes or deciding appeals based on procedural and substantial grounds. This proactive approach will contribute to fostering a more transparent and efficient urban planning system, ultimately benefiting both individuals and communities affected by urban development projects.

### **Clear obligation for data collection and sharing**

**(1.3).** To enhance the effectiveness of governance and promote sustainable urban development in Kyrgyzstan, it is crucial to address the gaps in the legal framework pertaining to data collection and sharing. Specifically, Kyrgyz legislation should be amended (e.g., the Law of the Kyrgyz Republic “On Local State Administration and Local Self-Government Bodies”, Regulations “On the State Agency for Architecture, Construction and Housing and Communal Services”, Regulations “On the Ministry of Natural Resources, Ecology and Technical Supervision”)<sup>30</sup> to include explicit

mandates for transparent data exchange both vertically and horizontally. Clear and mandatory obligations should be imposed on institutions and local government bodies to share relevant data, fostering collaboration and coordination. The existing ambiguity in the wording of the aforementioned pieces of legislation should be rectified to ensure that the State Agency for Architecture, Construction and Housing and Communal Services, the Ministry of Natural Resources, Ecology, and Technical Supervision, as well as local government bodies, are explicitly mandated to share data.

Additionally, the legislative framework should be revised to introduce requirements for horizontal data exchange among different cities, rayons, and oblasts, as well as local departments, fostering a more integrated and synergistic approach to address common challenges and contribute to sustainable urban development. Moreover, it is recommended to incorporate provisions in Kyrgyz legislation mandating the disaggregation of collected data to encompass women, youth, marginalized groups, and other vulnerable populations.

30. The recommendations in this section are not limited to the specific law referenced and their application may be interpreted accordingly by local experts.

This measure aims to provide policymakers with a comprehensive understanding of the diverse needs, challenges, and opportunities for various groups within the general population, facilitating the identification of specific interventions and targeted initiatives tailored to address the unique circumstances faced by different demographic groups.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024 (1.3):**

Among the participants from national and local authorities, two agreed that this recommendation is applicable, two deemed it not applicable, and two from local authorities found it partially applicable. One participant indicated that the issue was beyond their expertise. This feedback suggests a divided stance on the recommendation for mandatory data collection and sharing, with some stakeholders supporting it, others finding it irrelevant, and a few considering it partially applicable due to specific concerns.

**Elimination of overlaps in local self-government's roles and responsibilities related to urban planning and providing local self-governments jurisdictional autonomy (1.4).** To ensure a more streamlined and effective urban planning framework and to foster sustainable

and well-coordinated urban development aligned with national goals, it is highly recommended to explicitly define where the development of the master plans take place – on the local level by the local government body, or at the national level by the State Design Institute of Urban Planning and Architecture. Currently, in Kyrgyzstan the exact development is centralized at the national level and is monopolized. While the centralized approach ensures uniformity and adherence to standards throughout the country's urban planning initiatives and emphasizes the importance of a cohesive and comprehensive strategy in developing urban areas, taking into account both local considerations and broader national objectives, it is highly recommended to make local authorities responsible for the development of their respective urban planning documentation, including the master plan.

This will ensure greater responsiveness to the unique needs and characteristics of each locality, fostering a more tailored and contextually sensitive approach to urban planning. By respecting the principle of subsidiarity,<sup>31</sup> the responsibility for devising master plans should exclusively lie with the local self-government bodies in Kyrgyzstan, which will not only promote a decentralized decision-making process but will also encourage community engagement and participation. By decentralizing this aspect of urban planning, local authorities can play a pivotal role in shaping the growth and development of their communities. This approach is likely to result in more effective and sustainable urban plans that align with both local aspirations and overarching national objectives. Additionally, it facilitates a more dynamic and adaptive response to the evolving dynamics of individual urban areas within the broader national framework.

31. In this context, the "subsidiarity principle" refers to the idea that decisions related to local urban planning should primarily be made at the local level, by the communities directly affected by those decisions.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024 (1.4):**

Two representatives from local authorities find this recommendation relevant, as the responsibility for developing the master plan, though assigned to a specific entity, still falls largely on local authorities in practice. Three representatives from the national authorities consider that the Kyrgyz legal norms are not duplicated and the local-self-government acts as a customer. Two participants view this recommendation as partially applicable, reflecting differing perspectives on its practical implementation and alignment with existing legal frameworks. This feedback suggests that while there is recognition among some representatives of local authorities of the practical responsibilities they hold in urban planning, national authorities perceive the existing legal framework as adequately addressing the roles of local self-government as customers rather than developers. The varying viewpoints also indicate some uncertainty about the complete applicability of the recommendation, highlighting the need for further clarification and consensus on jurisdictional autonomy in urban planning responsibilities.

However, should local authorities lack the capacity to draft the plans independently, it would be useful to properly define them as “customers” in the master plans’ development process. In such instances, the State Design Institute of Urban Planning and Architecture should assume the role of “developer” to address the capacity shortfall.

These changes will require amending, among others:

- the Law “On Local State Administration and Local Self-Government Bodies of 2021”<sup>32</sup> where it states that the competence of the mayor’s office and *aiyl okmotu* includes “*the development of the master plan*”,
- the Charter of the State Design Institute of Urban Planning and Architecture under the State Design Institute of Urban Planning and Architecture under the Cabinet of Ministers of the Kyrgyz Republic which also mentions that the Institute “*is in charge of master plans development*” and
- the building code SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”<sup>33</sup> which mentions that the “*local self-governments are the customers*

*for the urban planning documentation”.*

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024 (1.4):**

Five participants from both national and local authorities consider this recommendation applicable, while one participant finds it partially applicable. Another participant did not address the question. This means that the majority of participants support the recommendation to eliminate overlaps in local self-government’s roles and responsibilities related to urban planning, in particular the the master plan development.

**Enhancing collaborative urban and infrastructure planning across administrative boundaries (1.4.3)** To facilitate inter-municipal collaboration across the administrative boundaries of different cities and *aiyl aimaks* on issues pertaining to urban, infrastructure and climate planning, it is recommended to introduce provisions that enable joint planning and decision-making processes, particularly in areas where functional and morphological realities extend beyond traditional administrative limits. By promoting alternative collaboration strategies, the Kyrgyz legal framework can better prepare for and address the challenges posed by dynamic urban landscapes. This includes provisions

32. Articles 45 (paragraph 10) and 51 (paragraph 7)

33. Paragraphs 4.5, 4.7

encouraging partnerships between *aiyl aimaks* and their bordering cities to ensure coordinated urban development and effective service delivery across administrative boundaries.

### **Naryn Town: Recommendations on the Governance Framework for Urban and Climate Planning**

UN-Habitat advocates for urban planning to be entrusted to authorities at the local level, meaning that decision-making power and responsibility should primarily reside within the local self-governance structure of Naryn. The devolution of urban planning functions from centralized ministries empowers local authorities to tailor spatial development strategies to the specific needs, conditions and aspirations of their city and its residents. By entrusting urban planning functions to the local government, the local authorities of Naryn Town can make urban planning with a deep understanding of the local context, including its priorities, and challenges. Nevertheless, such a shift of powers cannot be done in silos, meaning that it is necessary to enhance the capacity of local authorities to implement urban planning functions. They must have the necessary skills and expertise to conduct comprehensive urban planning processes. Capacity development includes training programs and capacity-building

initiatives focused on areas such as urban and land use planning, infrastructure development, environmental sustainability, and community engagement. Investing in the professional development of local planners and officials can ensure that urban development initiatives are of adequate technical quality and grounded in international best practice. Alternatively, another strategy for the devolution of planning functions involves the national government encouraging a diverse array of entities, not limited to public authorities, to engage in the development of urban planning instruments. This approach cultivates inclusivity and collaboration in urban planning. Rather than depending solely on government agencies or local public servants, Naryn (or any other city in Kyrgyzstan) can contract a variety of entities, such as non-profit organizations and private sector firms, to participate in urban planning instrument development.

Secondly, as to institutional coordination it is highly advised to establish horizontal coordination mechanisms amongst the departments on the local level. Naryn's local self-governance can be improved by mandating coordination among various departments responsible for urban planning, housing, environment, and infrastructure, etc. This will ensure a more integrated

and efficient approach to addressing local challenges. Moreover, establishing horizontal coordination mechanisms enables departments to share resources, expertise, and data more effectively, leading to better outcomes for the city and its residents. To implement horizontal coordination, formal mechanisms such as inter-departmental working groups, joint planning sessions, and regular coordination meetings should be introduced in both national and local level legislation.

Thirdly, local self-governments should be entrusted with the powers to facilitate data collection and sharing processes within their respective jurisdictions. By entrusting local authorities with this responsibility, urban planning efforts in Naryn and other cities can be grounded in localized data and tailored to the specific needs and priorities of their communities. To facilitate this process, the national government needs to formally mandate local self-governments with data collection and sharing and further establish data governance frameworks that outline protocols for data collection, storage, sharing, and usage. Additionally, capacity-building initiatives should be incorporated into legislation to equip local authorities of Naryn,



for example, with the necessary skills and resources to manage urban data effectively. Furthermore, fostering partnerships between local self-governments, academic institutions, and civil society organizations can enrich data collection efforts by tapping into specialized expertise and resources. This multi-stakeholder approach not only enhances the quality of urban data but also promotes collaboration and knowledge exchange within the community.

Fourthly, close attention should be paid to the public participation component of urban governance, which means establishing a meaningful mechanism to involve the public in primary data collection and consulting them while developing urban planning instruments. Thus, developers of local urban planning-related instruments should hold formal or informal meetings with the public, conducting surveys, focus group discussions, and public hearings to gather input and feedback on various aspects of urban planning. These meetings should be inclusive and accessible to all community members, providing opportunities for residents to voice their concerns, share their ideas, and participate in decision-making processes. Furthermore, urban managers in Naryn should ensure that

information about urban planning initiatives is communicated clearly and effectively to the public, using plain and accessible language. This may involve providing informational materials, such as brochures, fact sheets, and videos, and creating dedicated websites or online portals where residents can access relevant documents and resources.

Finally, it is recommended to strengthen the legal framework to empower the local level to engage in collaborative urban and infrastructure planning beyond administrative boundaries. This initiative will not only foster inter-regional cooperation but also promote more holistic and sustainable development outcomes for Naryn and its surrounding areas.



## Chapter 2 : Urban and Territorial Planning

## 2. Chapter 2: Urban and Territorial Planning

This chapter analyzes urban and territorial planning at the national, regional, and local levels in Kyrgyzstan using the specific criteria established by the Urban Law Module of the LCCTK. This analysis reveals how urban planning is orchestrated across different administrative tiers in Kyrgyzstan and how climate change considerations can be integrated into urban and territorial planning processes as foreseen by the New Urban Agenda.<sup>34</sup> The chapter begins with an examination of territorial planning at the national level, followed by that at the regional level, and then finishes with an assessment of spatial planning in urban areas. The use of targeted criteria illuminates both the shared and unique challenges and opportunities faced at these distinct levels. The chapter concludes with targeted recommendations for a legal framework that facilitates effective planning for sustainable, climate-resilient urban development.<sup>35</sup>

### 2.1. National Territorial Planning

#### 2.1.1. National Land-Use Classification

Classifying land at the national level according to its permitted uses is one means of fostering a harmonious balance of socio-economic development and environmental concerns. This approach can enable the conservation of ecosystems that play a role in climate change mitigation and adaptation (such as forests) and restrict urban development in areas unsuitable for human habitation. In Kyrgyzstan, the law provides for a clear division of land types. Chapter 10 of the Land Code (1999) distinguishes agricultural land from non-agricultural land, and further divides these two groups into the following categories:

- Agricultural lands include arable land, fallow, lands occupied by perennial plantations, hayfields, and pastures.
- Lands of populated areas.
- Lands for industrial, transportation, communication, energy, defense, and other purposes.
- Lands of specially protected natural territories include lands of state reserves, natural national parks, nature reserves (excluding hunting

reserves), natural monuments, botanical gardens, dendrological and zoological parks, and natural territories for recreational purposes.

- Forest lands.
- Water fund lands include lands occupied by water bodies (rivers, lakes, reservoirs, canals), glaciers, swamps, hydraulic, hydroelectric, and other water management facilities, as well as lands allocated for setback zones.
- Reserve lands.<sup>36</sup>

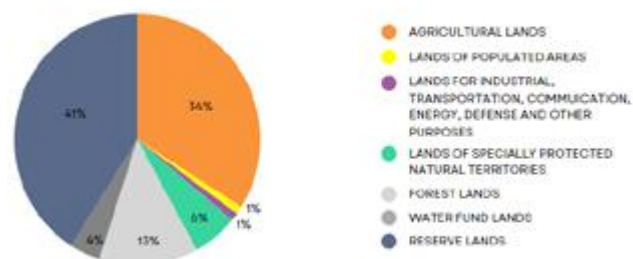
<sup>34</sup>. Para. 101.

<sup>35</sup>. For further information, see Chapter 3 of the Naryn Town Profile Report, which furnishes a comprehensive overview of urban planning in Kyrgyzstan, encompassing the various processes and authorities that are integral to the system.

<sup>36</sup>. Land Code of Kyrgyz Republic. (1999). <http://cbd.minjust.gov.kg/act/view/ru-ru/8>



As of 2021, the 199.9 thousand km<sup>2</sup> of Kyrgyz territory is distributed as follows:



**Figure 1.** The utilization of the land fund of the Kyrgyz Republic as of January 1, 2021. Retrieved from the Order of the Cabinet of Ministers of the Kyrgyz Republic as of dated May 16, 2022 No. 253-r. [http://cbd.minjust.gov.kg/act/view/ru-ru/219050?cl=ru-ru#pr\\_2](http://cbd.minjust.gov.kg/act/view/ru-ru/219050?cl=ru-ru#pr_2)

The distribution of land in Kyrgyzstan is concentrated in reserve (41%), agricultural (34%) and forest lands (13%), underscoring the country's emphasis on natural preservation and agriculture, with minimal proportions of land allocated for industrial and residential purposes. This indicates that Kyrgyzstan has used land use designations at the national level to manage challenges associated with limited amounts of flat land good for urban development due to country's predominantly mountainous terrain (94% of the land area). The careful allocation of land types is a nuanced response to the country's geographical constraints, which forces land use planners to balance development imperatives with environmental preservation. In addition to geographic necessity, this allocation of land uses can also be explained by economic necessity and industrial capacity in the post-Soviet era. After industrial production facilities were dismantled following the dissolution of the USSR, the towns that depended on these industries quickly declined. Consequently, the majority of the population had to shift towards agriculture and animal husbandry, as there were no substantial efforts to repurpose fertile lands for new industrial plants.

The substantial emphasis on reserve, agricultural, and forest lands takes on added significance in the context of land scarcity. Given that only a fraction of the national terrain is suitable for contiguous

urban or industrial development, Kyrgyzstan's land use policy reflects a pragmatic recognition of the need to safeguard critical ecological zones where development would be a challenge, if not impossible, in any case. Reserves, in particular, act as custodians of biodiversity and natural beauty, contributing to the country's identity and serving as potential anchors for sustainable tourism.

The allocation of a significant portion of land to agriculture acknowledges the historic importance of this sector to the national economy. Despite the challenges posed by the mountainous topography, the focus on arable land, perennial plantations, hayfields, and pastures underscores the commitment to maintaining traditional agricultural practices. It also serves as an acknowledgment that these lands are vital components of the country's cultural and economic fabric.

Furthermore, the minimal proportions of land allocated to industrial and populated areas reveal a conscious effort to prevent urban sprawl from developing in sloping, hard-to-service areas and to limit industrial expansion within the areas feasibly available. This cautious approach helps prevent undue strain on the environment and ensures that the quality of life for the population is not compromised in the pursuit of development goals.

In conclusion, Kyrgyzstan's land use patterns,



shaped by the scarcity of flat land due to its mountainous terrain, showcase a thoughtful and adaptive approach to sustainable development. The strategic allocation of land types reflects a commitment to environmental conservation, the preservation of cultural practices, and a pragmatic response to the geographical constraints that define the nation's territorial development.

### 2.1.2. Integrated Transport and Infrastructure Network

A well-integrated, streamlined transport and infrastructure network is pivotal for fostering balanced economic growth for both regions and cities. In Kyrgyzstan, the General (National) Settlement Scheme<sup>37</sup> establishes long-term plans and orients future development for the country at the national level. It identifies, amongst others, the main means for improving settlements in the country in conjunction with interregional transport infrastructures. It also serves as the foundation for the development of engineering and transport infrastructure projects. The General Settlement Scheme lays the groundwork for comprehensive

and sustainable development by delineating key directions for settlement enhancement and interregional engineering and transport infrastructures, ensuring continued progress in Kyrgyzstan.

### 2.1.3. Coordination between National Territorial Plan and National Climate Plans

Climate change initiatives in Kyrgyzstan began in 2000 with the adoption of the United Nations Convention on Climate Change (UNFCCC)<sup>38</sup> followed by the submission of National Communications (NCs) to fulfill the country's obligations under the UNFCCC.

In 2013, priority areas for climate change adaptation were identified, including water resources, agriculture, energy, emergency situations, healthcare, as well as forest and biodiversity.<sup>39</sup> Thereafter, adaptation measures within each adaptation priority area were developed as part of the national Climate Change Adaptation Strategy until 2020.<sup>40</sup> Despite this, only a short section of the National Development

Strategy for 2018-2040<sup>41</sup> was dedicated to environmental concerns, climate change adaptation, and disaster risk reduction.<sup>42</sup>

While the development of the Climate Change Adaptation Strategy was envisioned as the initial step toward the development of a National (Climate) Adaptation Plan, its exact inception process commenced in 2016 following Kyrgyzstan's signing of the Paris Agreement and a subsequent high-level conference titled, "From Paris to Bishkek: On the Way to Sustainable Climate Resilient Development for Kyrgyzstan". In 2018, a Readiness and Preparatory Support Proposal was presented to the Green Climate Fund for the commencement of the National Adaptation Plan process development, gaining approval in 2020.<sup>43</sup> While the work is ongoing and the UNDP is facilitating the process<sup>44</sup> as of December 2023, there is still no existing National Adaptation (Climate) Plan from a regulatory standpoint. Nevertheless, Kyrgyzstan has remained committed to its climate change objectives by, inter alia, ratifying the Paris Agreement in 2019<sup>45</sup> and submitting its Nationally

37. Paragraph 5 of SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

38. United Nations Convention of Climate Change. <https://cbd.minjust.gov.kg/17016/edition/297110/ru>

39. Resolution of the Cabinet of Ministers of the Kyrgyz Republic "On approval of priority areas for adaptation to climate change in the Kyrgyz Republic until 2017" No. 549. (2013). <http://cbd.minjust.gov.kg/act/view/ru-ru/94766>

40. The draft Strategy of the Kyrgyz Republic on adaptation to climate change has been submitted for public discussion. (2013, January 28). <https://infoik.net.kg/index.php/item/142-na-obshchestvennoe-obsuzhdenie-vnesen-proekt-strategii-kyrgyzskoj-respubliki-po-adaptatsii-k-izmeneniyu-klimata>; draft decision of the Government of Kyrgyzstan "On the Climate Change Adaptation Strategy of the Kyrgyz Republic until 2020". <https://policy.asiapacificenergy.org/sites/default/files/Draft%20Strategy%20of%20the%20Kyrgyz%20Republic%20on%20Adaptation%20to%20Climate%20Change%20until%202020%20%28RU%29.pdf>

41. Order of the President of the Kyrgyz Republic No. 221 "National Development Strategy of the Kyrgyz Republic for 2018-2040". (2018). <https://www.stat.kg/ru/ukaz-prezidenta-kyrgyzskoj-respubliki-o-nacionalnoj-strategii-razvitiya-kyrgyzskoj-respubliki-na-2018-2040-gody/>

42. National Development Strategy of the Kyrgyz Republic for 2018-2040. (2018). <http://mineconom.gov.kg/froala/uploads/file/57210c8631a8d9c9f5c9b86bc0bbb334a3d5ac90.docx>

43. Readiness and Preparatory Support Proposal for the initiation of its National Adaptation Plan Process. (2020). <https://www.greenclimate.fund/sites/default/files/document/kyrgyzstan-nap-undp.pdf>

44. The Kyrgyz Republic launched the process of national planning for adaptation to climate change. (October 21, 2021). <https://www.undp.org/kyrgyzstan/press-releases/kyrgyz-republic-launched-process-national-planning-adaptation-climate-change>

45. Law "On the ratification of the Paris Agreement under the United Nations Framework Convention on Climate Change, signed on December 12, 2015 in the city of Paris". (2019). <https://cbd.minjust.gov.kg/111972/edition/979958/ru>

Determined Contributions (NDCs) in 2015 and its updated version in 2021.

Therefore, while Kyrgyzstan is making progress towards addressing climate change issues through systematic work, implementation gaps still exist, highlighting the need for ongoing efforts to enhance resilience, including the establishment of a National Adaptation (Climate) Plan. Moreover, it is necessary to establish a provision to coordinate national climate and national territorial plans to ensure that climate adaptation measures are effectively integrated into land use and development strategies. This coordination is crucial for optimizing resource allocation, avoiding policy conflicts, and ensuring that climate resilience is built into the country's broader development framework, thereby promoting sustainable and resilient urban and rural development.

#### **2.1.4. Climate Vulnerability of the National Territorial Plan**

As mentioned in sub-section 2.1.3, climate issues are currently not sufficiently integrated into Kyrgyzstan's legislation or its national planning instruments. Thus, the climate vulnerability of the General Settlement Scheme in Kyrgyzstan cannot

be assessed. This lack of integration poses a significant threat to Kyrgyzstan's sustainable development goals, particularly as the country grapples with the increasing frequency and severity of climate-related events.

#### **2.1.5. Emissions Associated with National Territorial Plan**

This sub-section aims to scrutinize the potential influence of the national territorial plan on climate change mitigation, a process to be conducted via environmental impact assessments (EIAs) or strategic environmental assessments (SEAs). 1999 Law "On Environmental Impact Assessment" in Kyrgyzstan establishes the concept of EIA as involving the identification, analysis, assessment, and consideration of the anticipated impacts of planned economic and other activities, along with the resultant environmental changes. This framework applies to master plans, populated areas, and other urban planning documentation, with the aim of averting potential adverse effects of planned activities on the environment, as well as associated socio-economic consequences.<sup>46</sup> The process consisting of four phases (deciding on the need to conduct an EIA, preliminary EIA, EIA, and post-project analysis) is detailed in the

2015 Regulations on the Procedure for Conducting Environmental Impact Assessments in the Kyrgyz Republic.<sup>47</sup>

However, in practice, the general concepts of EIA and SEA in Kyrgyzstan have been somewhat substituted. This distortion dates back to 1999 when the Law "On Environmental Impact Assessment" was enacted and introduced the EIA concept, while the SEA concept was relatively new both globally and specifically in Kyrgyzstan. Consequently, according to widely accepted definitions, the SEA, being a systematic process of assessing the environmental impacts of proposed policies, plans or program initiatives to ensure they are fully implementable and appropriately addressed at the earliest stages of decision-making, along with consideration of economic and social aspects,<sup>48</sup> was mistaken for EIA. Meanwhile, EIA predominantly focused on small-scale projects, such as those related to water and sanitation, a dam, power plant, or motorway, with likely significant adverse environmental, including health, impacts.<sup>49</sup>

Therefore, although Kyrgyzstan has taken some measures to bring its legislation in line with international best practices, this underscores its dedication to promoting responsible and

46. Article 10 of the Law of Kyrgyz Republic "On Environmental Impact Assessment". (1999). <https://cbd.minjust.gov.kg/219/edition/638848/ru>

47. Regulations on the Procedure for Conducting Environmental Impact Assessments in the Kyrgyz Republic. (2015). <http://cbd.minjust.gov.kg/act/view/ru-ru/97326>

48. Benefits of a Strategic Environmental Assessment. [https://unece.org/DAM/env/eia/documents/SEAguides/Benefits\\_SEA\\_English.pdf](https://unece.org/DAM/env/eia/documents/SEAguides/Benefits_SEA_English.pdf)

49. Strategic Environmental Assessment and Environmental Impact Assessment. (n.d.). <https://www.oecd.org/env/outreach/eapgreen-sea-and-eia.htm>

sustainable urban development amidst the challenges of climate change. However, there is still more work to be done. Specifically, there is a need for a proper definition of the EIA concept (refer to the Recommendations part).

## **2.2. Regional (Sub-National) Territorial Planning**

### **2.2.1. Integrated Transport and Infrastructure Network**

Transportation planning is also critical at the regional level to ensure access and connectivity between settlements within a region and settlement in different regions. The Regional Resettlement, Environmental Management, and Territorial Organization of Productive Forces Scheme, which is the applicable planning document for regional transport planning in Kyrgyzstan, complements the provisions of the National General Settlement Scheme. The scheme determines the development of state, interregional, and regional transport infrastructures. This fosters sustainable development, enhances regional connectivity, and fortifies its overall resilience in the face of climate change challenges.

### **2.2.2. Coordination Between Regional Territorial Plan and National Climate Plans**

As noted in subsection 2.1.3, Kyrgyzstan currently lacks a National Climate Plan to address issues related to climate change and lacks a specific provision for the national climate plan and national territorial plan alignment. Therefore, at this moment, there are no relevant legal provisions requiring the coordination of national climate plans and the regional territorial plan, i.e. Regional Resettlement, Environmental Management, and Territorial Organization of Productive Forces Scheme. The coordination between such a climate plan and the scheme will be important for ensuring that regional planning efforts are effectively integrated with climate change mitigation and adaptation strategies. It will also enable the identification and implementation of measures to reduce greenhouse gas emissions, protect vulnerable communities from climate-related hazards, and promote the sustainable management of natural resources through regional territorial plans.

### **2.2.3. Consistency of Regional Territorial Plan with National Territorial Plan**

Ensuring consistency in plans from the national to the regional level is crucial for a unified and coordinated approach to territorial development. In Kyrgyzstan, provisions of the General Settlement Scheme form the basis for all types of urban and territorial planning activities, such as, the development of settlement schemes, environmental management, the territorial organization of the productive forces of individual regions, the territory of regions, territorially integrated schemes for nature conservation and environmental management, district planning schemes and projects, sectoral schemes and projects of engineering and transport infrastructure, as well as other documentation of interregional and regional significance.<sup>50</sup> This facilitates a streamlined and integrated process that aligns various aspects of territorial development as well as facilitates an effective collaboration among regions, ensuring that local and national development efforts complement each other. In this way, it enhances the sustainability and resilience of the overall territorial development strategy by promoting harmonious coordination across different sectors and geographic scales. The interconnected

50. Subparagraphs 5.5, 5.6 of SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

nature of these plans contributes to a more comprehensive and well-coordinated approach, ultimately supporting the overarching goals for the balanced and sustainable development of Kyrgyzstan.

#### **2.2.4.Climate Vulnerability of the Regional Territorial Plan**

As mentioned in sub-sections 2.1.3, 2.1.4, and 2.2.2, climate issues are not sufficiently integrated into the legislation of Kyrgyzstan. Thus, the climate vulnerability of the Regional Resettlement, Environmental Management, and Territorial Organization of Productive Forces Scheme is unable to be assessed. This underscores the urgent need for a more robust integration of climate considerations into Kyrgyzstan's legislative framework at all levels. Furthermore, integrating climate issues into legislation will ensure that regional development plans are resilient and adaptive in the face of the changing climate landscape. Such concerted efforts will not only enhance the scheme's ability to address climate vulnerabilities but will also contribute to the overall climate resilience of Kyrgyzstan's territorial development strategies.

#### **2.2.5.Emissions Associated with Regional Territorial Plan**

As mentioned in subsection 2.1.5, the Regional Resettlement, Environmental Management, and Territorial Organization of Productive Forces Scheme, like all other spatial planning instruments in Kyrgyzstan, is subject to a thorough EIA. This rigorous evaluation process is essential for comprehensively analyzing the potential environmental implications of the scheme, enabling informed decision-making that aligns with environmental sustainability goals. By subjecting the scheme to an EIA, Kyrgyzstan reinforces its commitment to responsible and sustainable urban planning practices, ensuring that territorial development initiatives are in harmony with environmental preservation and conservation objectives.

### **2.3. Urban Planning in Urban Areas**

#### **2.3.1.Land-Use Classification**

As mentioned in subsection 2.1.1, Kyrgyzstan employs a categorization of seven land types that significantly influence land allocation, development strategies, and conservation initiatives throughout the country. Moreover, in the context of property rights, there are three

primary types of land: state-owned, municipally owned, and private lands. At the local level, a finer distinction of land types emerges based on technical and economic indicators. Annex 12 of the building code SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation" (2020), identifies the land-use designations in urban areas as for residential and public development. In suburban areas, the lands are categorized into lands for environmental protection, medical and recreational purposes, urban and rural settlements, recreational and historical-cultural uses, industrial and infrastructure purposes, agricultural lands, forest reserves, water management, and reserved lands.<sup>51</sup> Such diversity facilitates a nuanced and tailored approach to land use planning at different levels. The breakdown of land into state-owned, municipally-owned, and private lands offers a practical basis for considering ownership structures and governance at the local level, allowing for more targeted interventions and development initiatives. The defined diversity in urban and rural land categorization not only reflects the richness of Kyrgyzstan's landscapes but also enables adaptive and sustainable development strategies that respond to the unique characteristics of each area.

51. Annex 12 of SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>



### 2.3.2. Planning for Future Land Needs in Safe Locations

“Planning”, as a concept, inherently looks forward, and urban planning, specifically, should take a proactive stance to managing urban development rather than a reactive one. In Kyrgyzstan, essential requirements for initial data to develop a master plan include information on the studied planning object, past research projects, modern state and development programs, land use schemes, sanitary and ecological conditions, sociological and socio-economic surveys, demographic situations, characteristics of residential and public infrastructure, industry, utilities, transportation, and more. These encompass historical and architectural plans, economic forecasts, planning and urban development studies, and various materials contributing to a comprehensive understanding of the territory. Thus, in the development of a master plan, Kyrgyz urban planning law emphasizes the importance of having a diverse array of data, encompassing everything from historical plans to contemporary socio-economic surveys. The incorporation of such comprehensive information not only lays the foundation for effective urban planning but also reflects a commitment to fostering sustainable, resilient, and inclusive urban development in

the face of evolving societal and environmental dynamics. This holistic approach underscores the country’s dedication to creating cities that thrive both now and in the future.<sup>52</sup>

However, there is still a need to integrate relevant climate data such as temperature changes, precipitation patterns, and the likelihood of extreme weather events into urban plan preparation through legal requirements. This will enable the identification of areas that are safe from or alternatively in danger of adverse climate impacts, and allow urban plans to make development decisions accordingly. It will also facilitate the alignment of urban planning with climate change mitigation and adaptation strategies.

### 2.3.3. Urban Growth Boundaries

Urban growth management seeks to strategically influence the location, quality, and timing of development, aiming to reduce “sprawl”. This term refers to low-density, non-contiguous, automobile-dependent development that prematurely or excessively utilizes farmland, natural preserves, and other valuable resources.<sup>53</sup>

The goal of urban planning for sustainable development is to promote urban growth in a way that encourages development inward and upward, rather than outward, fostering sustainable and efficient land use. The concept of urban growth management strategies also has the potential to contribute to climate change mitigation by creating a more compact, less car-oriented urban form. Moreover, urban growth management in urban planning can preserve carbon sinks by preventing development in surrounding natural and agricultural areas.

In Kyrgyzstan, the master plan uses a “settlement boundary line” to manage urban growth. The settlement boundary line establishes the boundaries, and therefore the size, of an urban settlement’s territory. The implementation of a settlement boundary line under the master plan in Kyrgyzstan underscores a commitment to well-managed and sustainable urban development.<sup>54</sup> While not explicitly tied to climate change mitigation strategies at present, this mechanism supports environmentally conscious urban planning.

52. Annex 7 of SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

53. Paragraph 2.3.3 of Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

54. Paragraph 10 of SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

### 2.3.4. Long-Term Planning

As previously mentioned, the master plan for a settlement serves as the key legally prescribed urban planning document, delineating a prioritized and phased strategy to align with state objectives and the community's needs over the subsequent 15-25 years. The plan establishes the directions and boundaries for the settlement's territorial expansion, defines the functional purpose and construction zoning of the area, and guides crucial decisions about locating objects of city-wide significance. The plan also includes a transport service diagram with urban planning regulation lines, an engineering systems diagram, and a landscaping plan. It aims to safeguard the territory from both natural and man-made hazards, preserve the natural and historical-cultural heritage, and outline a structured sequence for territorial development. This comprehensive approach reflects a meticulous analysis of the settlement's present and future requirements, aligning with the evolving needs and goals of both the state and the residents and fostering a harmonious and resilient urban environment for the years ahead.

### 2.3.5. Urban Plan Reviews

While the development of the master plan is carried out every 15-25 years, its update takes place every five years based on the decision of the local self-government authority in consideration of the technical and economic changes that have taken place in the intervening period.<sup>55</sup> This cyclical process of updating urban plans ensures that such plans remain responsive to evolving urban dynamics and align with the contemporary needs and aspirations of both the state and the local population. This is especially critical with respect to climate resilience, as urban plans need to be able to adapt to rapidly changing climatic conditions. These periodic revisions enable an adaptive approach to urban planning by allowing settlements to address emerging challenges, capitalize on new opportunities, and uphold sustainable development principles in the face of change.

### 2.3.6. Consistency of Urban Plans with National Territorial Plan

Since the master plan is the direct urban planning documentation, provisions of subsection 2.2.3 are applicable here.

## Recommendations

Chapter 2 revealed that urban and territorial planning in Kyrgyzstan, spanning national, regional, and local levels, to a certain extent aligns with the criteria outlined in the Urban Law Module of the Law and Climate Change Toolkit. The documents across these levels are intricately linked and mutually reinforcing. They cover an extensive array of subjects, ranging from transportation and emissions assessment to strategic planning for future requirements. This comprehensive approach underscores Kyrgyzstan's commitment to integrated legal frameworks of urban planning, addressing a diverse spectrum of challenges while preparing for the evolving needs of the future.

Nevertheless, it became clear that territorial and urban planning in the Kyrgyz Republic is not sufficiently linked to climate planning. When it comes to integrating climate change into planning instruments, the following legal amendments are recommended:

**Establishment of the national climate change policy framework (2.1.3).** Given the initial steps toward establishing a National Adaptation Plan in Kyrgyzstan, there is a strong need to accelerate the finalization of the climate planning instrument. This will provide a comprehensive and regulated framework for coordinated climate action that

55. Paragraph 9.6 of SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

can be integrated into urban planning legislation. The Adaptation Plan will serve as a strategic guide, aligning the diverse initiatives undertaken to date and ensuring a unified approach to climate adaptation across sectors. Finalizing the National Adaptation (Climate) Plan will not only bring clarity to the country's climate resilience goals but also provide a structured approach to achieving these objectives. Moreover, within the framework of this recommendation, it is advised to establish a provision to coordinate national climate and national territorial plans to ensure that climate adaptation measures are effectively integrated into land use and development strategies. This coordination is vital for the effective integration of climate adaptation measures into land use and development strategies.

By aligning these plans, Kyrgyzstan can optimize resource allocation, prevent policy conflicts, and create a cohesive approach to development that incorporates climate resilience. This integration will promote sustainable and resilient urban and rural development, ensuring that all areas of the country are better prepared to face climate-related challenges and that development efforts contribute positively to long-term climate adaptation goals.

**Legal obligations to conduct EIAs and SEAs (2.1.5).** It is recommended to revise the Kyrgyz legislation to clearly define and differentiate Environmental Impact Assessments (EIA) from Strategic Environmental Assessments (SEA). This may require amendments to the 1999 Law “On Environmental Impact Assessment” (as, for example, outlined in the draft law provided by UNECE<sup>56</sup>), which would ensure that both processes are utilized appropriately, with SEAs used to evaluate the impacts of policies and plans, while EIAs should remain dedicated to assessing project or activity impacts. Moreover, the law should make SEAs mandatory for draft territorial and planning instruments. SEAs should assess the climate change impacts of plans, such as carbon emissions associated with urban, regional and national plan implementation

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** One participant from the national authorities considers this recommendation relevant, while a participant from the local authorities finds it partially applicable. Five participants indicate that the recommendation is outside their area of expertise. This means that while the recommendation has received some support from national authorities, its applicability at the local level may be more nuanced and context-dependent. The varied

responses suggest a need for further clarification and potential adaptation of the recommendation to address local concerns and expertise gaps.

**Linking climate planning and urban/territorial planning instruments (2.1.3, 2.2.2, 2.3.6).** By integrating climate change considerations into planning requirements, policymakers will have an opportunity to integrate climate vulnerability in the Kyrgyz legal framework for territorial and regional planning. This involves prioritizing the amendment of the urban planning-related legislation to require that climate vulnerabilities be assessed during the planning process, thereby guaranteeing the resilience of the urban planning documentation at all levels against the challenges posed by a changing climate. By taking this proactive approach, policymakers can fortify the foundations of urban planning and environmental management, ensuring that they align with sustainable practices that mitigate the potential adverse effects on communities and infrastructure. In practice, this can be done by, inter alia, introducing legislative amendments that oblige planners to explicitly address climate change vulnerabilities in urban planning, such as precipitation levels, floods, average temperature, soil and groundwater conditions, and the increased occurrence of extreme weather events such as strong winds, storms, torrential rains, and

56. Draft Law of the Kyrgyz Republic “On Environmental Assessment” [https://unece.org/fileadmin/DAM/env/eia/meetings/2015/Mav\\_13.05\\_round-table\\_law\\_EIA\\_Kyrgyz/5...draft\\_law.pdf](https://unece.org/fileadmin/DAM/env/eia/meetings/2015/Mav_13.05_round-table_law_EIA_Kyrgyz/5...draft_law.pdf)

urban floods.

Moreover, it is crucial to integrate relevant climate data into legislative frameworks by incorporating obligations for planners to make projections for temperature changes, precipitation patterns, and the likelihood of extreme weather events. By basing regulations on the latest scientific information, legislation can be more adaptive to the changing climate. By weaving climate considerations into the fabric of urban planning legislation, Kyrgyzstan can fortify its commitment to creating cities that not only thrive socio-economically but can also withstand the impacts of climate change. This strategic integration of climate data into urban and territorial planning requirements will enhance the country's preparedness, ultimately contributing to the development of sustainable and climate-resilient urban environments.

### **Inclusion of climate change solutions while establishing urban growth boundaries (2.3.3).**

Though in Kyrgyz legislation there are well-defined criteria for the establishment of urban growth boundaries, the Kyrgyz legal framework will benefit from integrating the settlement boundary concept with explicit climate change mitigation goals.

This would align the nation's urban development with broader environmental and climate sustainability objectives, while also enhancing the resilience of urban areas against the impacts of climate change. It reflects a forward-thinking approach that goes beyond immediate urban planning considerations, and promotes the development of cities that are adaptable, sustainable, and capable of withstanding future environmental challenges.

Expanding upon the insights presented in Chapter 3 of the Naryn Town Profile Report, additional recommendations on urban and territorial planning topic are as follows:

#### **Devolution of urban planning function.**

Though Kyrgyz legislation gives enterprises, organizations, and institutions with the appropriate licenses the right to develop urban planning instruments,<sup>57</sup> in practice, only the State Design Institute of Urban Planning and Architecture performs this function. It is recommended that the law create incentives to encourage a broader range of entities to engage in urban planning activities, fostering innovation and improving the overall quality of urban development initiatives.

In this respect, it is critical to define a structure though relatively flexible, adaptable and cyclical, process for the development of urban planning instruments, accompanied by a well-defined timeline for each stage and the authorities involved (produced in any form that can be distributed among those in charge). The information that is currently contained in the 1994 Law "On Urban Planning and Architecture of the Kyrgyz Republic" (Article 36), SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation" (paragraph 4; Annex 1) and the 2018 Regulations on Holding Public Hearings of Urban Planning Documentation in the Kyrgyz Republic requires a structured approach to promote transparency, accountability, and a clear understanding of the planning workflow, facilitating smoother coordination between national and local authorities, as well as increased accountability to the public.

57. Paragraph 4.7 of SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021) <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>



### **Development of the required urban planning documents at the national and regional levels**

is also crucial to facilitating the holistic approach to urban development. This involves creating a cohesive framework that aligns with broader strategic objectives while accommodating the unique needs and characteristics of specific regions.

### **Naryn Town: Recommendations on Urban and Territorial Planning**

Finalizing the National Adaptation Plan will have significant impacts at the local level, including Naryn Town, since it will clarify the country's climate resilience goals and provide a comprehensive and regulated framework for coordinated climate action. Such a framework will further be translated into specific legal provisions, which will serve as the bedrock for embedding climate resilience considerations within local urban planning frameworks. This, for example, will allow to take into account changes in temperature, the nature of precipitation and the likelihood of extreme weather events when developing urban planning documents. Moreover, the concept of "boundary settlement line" can be linked with climate data to mitigate climate change to identify areas in Naryn that are most exposed to climate risks and optimize

the placement of new infrastructure facilities. Therefore, by integrating climate adaptation goals into local legislation, Naryn can proactively address climate-related challenges and fortify its infrastructure against future environmental risks. Moreover, the National Adaptation Plan will set the groundwork for aligning climate change legal and policy instruments with urban planning tools. This alignment will be mirrored in the pertinent urban planning legislation, ensuring that climate considerations are systematically integrated into urban planning processes. This integration will enable Naryn and similar locales to effectively address climate-related challenges and foster sustainable urban development practices prioritizing resilience and environmental stewardship.

# Chapter 3 : Urban Planning and Design for Adaptation



### 3. Chapter 3: Urban Planning and Design for Adaptation

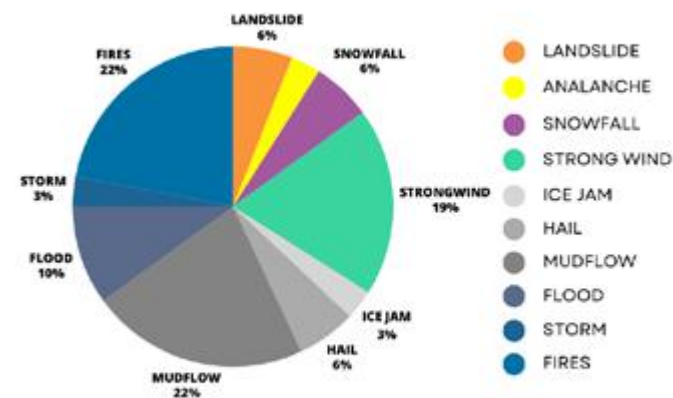
Being a landlocked country situated in a mountainous region prone to extreme weather events such as floods, droughts and landslides, Kyrgyzstan is highly dependent on endogenous water sources (groundwater, glaciers, mountain lakes, and river systems) to support its agriculture industry, which represents a key part of the country's economy. For this reason, Kyrgyzstan is considered to be one of the countries in Central Asia most vulnerable to the impacts of climate change. Moreover, Kyrgyzstan faces challenges in adapting to climate change due to limited resources and infrastructure. Despite making commitments to climate change mitigation and adaptation through international environmental agreements such as the UNFCCC (ratified in May 2000), and the Paris Agreement (ratified in November 2019), the Kyrgyz Republic has been progressing slowly in the implementation of these commitments. There has been limited advancement since 2013, when priority action areas for climate change adaptation were identified, namely water resources, agriculture, energy, emergency situations, healthcare, forests and biodiversity.<sup>58</sup> This chapter will analyze the

country's measures for climate change adaptation, specifically in the built environment, concluding with recommendations to better integrate climate change adaptation into urban development in Kyrgyzstan.

#### 3.1. Climate Risks and Vulnerability for Planned Areas and Infrastructure

##### 3.1.1. Climate Risk and Vulnerability Assessments to Assess Current and Estimated Future Vulnerabilities and Risks as Part of the Urban Planning Process

The first phase in preparing for adaptation in urban areas involves understanding the relevant climate risks and evaluating the vulnerability of all implicated communities, ecosystems, and sectors. Kyrgyz legislation<sup>59</sup> categorizes emergencies into five types, with "natural disasters" being those linked to the consequences of climate change such as earthquakes, mudflows, floods, avalanches, rockfalls, landslides, etc. Thirty-two natural disasters were recorded in the Kyrgyz Republic between January 1, 2023, to January 1, 2024, (see Figure 2).



**Figure 2.** Natural disasters in the Kyrgyz Republic during the period from 01.01.2023 to 01.01.2024. Retrieved from <https://www.mchs.gov.kg/ru/statistics/>

58. Resolution of the Cabinet of Ministers of the Kyrgyz Republic "On approval of priority areas for adaptation to climate change in the Kyrgyz Republic until 2017" No. 549. (2013). <http://cbd.minjust.gov.kg/act/view/ru-ru/94766>

59. Decree of the Government No. 550 "On Approval of the Classification of Emergency Situations and Criteria for their Assessment in the Kyrgyz Republic". (2018). <https://cbd.minjust.gov.kg/12747?cl=ru-ru#pr2>

Under Kyrgyz urban legislation, authorities can develop a “Territorial Integrated Scheme of Nature Protection and Environmental Management”, which details and justifies the proposed functional zoning of the territory and other project decisions related to protecting the area from emergencies. Similarly, within the Regional/District Planning Schemes, there is an obligation to develop a “comprehensive territory assessment scheme” that defines the boundaries of flood zone areas, and areas with unfavorable geological, hydrogeological, atmospheric, and other conditions (seismic activity, landslides, flooding, erosion, extreme precipitation, etc.). These boundaries can accordingly restrict urban and economic development to mitigate climate risks and vulnerabilities in the planning area. The comprehensive territory assessment scheme also establishes “unfavorable” and “less favorable” zones for residential, civil, and industrial construction based on, among other things, natural conditions.<sup>60</sup>

However, while these instruments require planning authorities to define zones that are susceptible to climatic risks and vulnerabilities, e.g., flood zones, in order to restrict development, none of these instruments explicitly call for the **assessment** of vulnerabilities and risks

associated with climate change and evolving environmental conditions. Instead, the law furnishes only the implicit obligation to consider environmental-climatic risks and vulnerabilities when making zoning decisions at the local level or when defining zones restricting development at the regional level. This legal obligation provides a foundation for using assessments of risks and vulnerabilities linked to climate change in zoning and urban development decisions. However, there is an opportunity to refine and expand these provisions by, inter alia, requiring forward-looking assessments and adaptive strategies explicitly linked to climate change prior to formulating new planning instruments or making zoning and land-use decisions. This will further strengthen the country’s resilience to climate change and enhance its effectiveness in mitigating emerging risks.

### 3.1.2.Methods and Processes for Risk Vulnerability Assessment

The Kyrgyz legal framework for urban planning does not contain provisions detailing the necessary steps for conducting a climate risk and vulnerability assessment. Nonetheless, since 2019, the Unified System of Integrated Monitoring and Forecasting of Emergencies has

been active in the Kyrgyz Republic to monitor and forecast emergencies. It operates at the national, regional and local scale and assigns risks levels according to the categories, “daily routine”, “increased readiness”, and “state of emergency”. This system ensures that there is constant observation of identified and potential sources of emergencies. In case of an emergency caused by natural hazards, the system is responsible for the continuous collection, processing, and analysis of information for monitoring and forecasting in real-time, including operational forecasting on the development of emergencies, determining the scale and boundaries of emergency zones, and making recommendations to localize and mitigate the impacts of emergencies.<sup>61</sup> Though the Ministry of Emergency Situations established the Unified System of Integrated Monitoring and Forecasting of Emergencies in 2019, the portal (<http://www.ucmfs.mes.kg>) isn’t operational as of January 2024.<sup>62</sup>

60. SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

61. Regulation on the Unified System of Integrated Monitoring and Forecasting of Emergency Situations in the Kyrgyz Republic. (2019). <https://cbd.minjust.gov.kg/157218>

62. ERIK Project – Five Years of Work for the Country. <https://www.mchs.gov.kg/ru/news/proekt-erik-pyat-let-raboty-dlya-strany/>



Thus, while there is a mechanism in place for the assessment and monitoring of disaster risks in Kyrgyzstan, there are no legal provisions outlining the method and procedure for conducting risk and vulnerability assessments in the context of urban planning. Moreover, there are no legal provisions linking climate risk management across urban planning and general emergency/disaster management frameworks.

### **3.1.3. Inclusive and Participatory Vulnerability Assessments**

Vulnerability assessments are most comprehensive and accurate when all stakeholders are actively engaged and encouraged to provide information, with particular attention given to historically marginalized groups such as women, youth, older individuals, and people with disabilities. It is particularly important to include communities possessing traditional environmental knowledge and historical memory of disaster occurrences and coping mechanisms should be included. However, the legal provisions for monitoring disaster risk in Kyrgyzstan fail to include explicit participatory elements, while participation in urban planning decisions is limited to ex-post facto review of draft plans as described in subsection 1.2 of this report.

### **3.1.4. Climate Hazards**

As highlighted in subsection 3.1.1, urban planning legislation in Kyrgyzstan lacks provisions explicitly requiring the assessment of future vulnerabilities and risks in specific territories. The existing requirements are limited to:

Defining flood zone areas.

- Defining areas with unfavorable geological, hydrogeological, atmospheric, and other processes (seismic activity, landslides, flooding, erosion, extreme precipitation, etc.).
- Defining unfavorable and least favorable zones for residential, civil, and industrial construction based on, among other things, natural conditions.

However, the Law “On Civil Protection” (2018) mandates the Ministry of Emergency Situations to coordinate a comprehensive monitoring and forecasting system for natural, man-made, and other hazards. Simultaneously, local self-government bodies are required to conduct activities within their respective territories related to forecasting, risk assessment of disasters, and the prevention of emergencies.

Therefore, although there are requirements for identifying climate hazards in Kyrgyzstan at both the national and local level, these

requirements have not been incorporated into the urban planning legislation. This gap raises concerns about the comprehensive integration of climate considerations into the decision-making processes that shape urban development. To address this issue effectively, it is crucial to bridge the existing divide between the established climate risk assessment requirements in disaster risk management law and the urban planning legal framework. This alignment would fortify the resilience of urban areas against the foreseeable impacts of climate change, ensuring a more sustainable and adaptive approach to urban development.

### **3.1.5. Climate Hazards Maps**

Hazard maps play a crucial role in identifying areas prone to risks, including their frequency and geographic scope. These maps illustrate the spatial reach of hazards across various susceptibility levels and can also furnish additional technical details, such as magnitude, intensity, and, in certain instances, likelihood or probability of the hazard occurring.

As outlined in subsection 3.1.4, there is a requirement for the Ministry of Emergency Situations and local authorities to “monitor” and “forecast” natural, climate-related hazards. However, there is no specific mandate for

the responsible institutions to create climate hazard maps. Nevertheless, the Department of Monitoring and Forecasting of Emergency Situations within the Ministry of Emergency Situations of Kyrgyzstan has already published 19 volumes titled “Monitoring, Forecasting of Hazardous Processes and Phenomena in the Territory of the Kyrgyz Republic,” categorized by different administrative regions, districts, and cities such as Osh and Bishkek.

In these volumes, maps are used to illustrate zones of development for dangerous natural processes, classified by the degree of danger based on the severity of potential impacts. The maps for specific regions pinpoint areas susceptible to landslides, mudslides, floods, coastal erosion, rockfalls, and avalanches, the location, and degree of danger of high-mountain breakthrough-prone lakes, and tailings storage facilities. Additionally, zoning maps for administrative districts identify areas prone to landslide hazards.<sup>63</sup>

Thus, while the Ministry of Emergency Situations has published volumes that provide valuable insights into the spatial distribution of hazardous phenomena across Kyrgyzstan, there is no legal mandate for planning authorities to create or use climate hazard maps when developing urban plans or making planning (e.g., development)

decisions.

### **3.1.6. Identification of People, Property, and Economic Sectors Exposed to Climate Risks**

According to Kyrgyz legislation, “emergencies” are situations that occur in a specific area due to dangerous natural or man-made events, accidents, catastrophes, or other disasters.<sup>64</sup> These situations may be past or potential events that result in human casualties, harm to human health or the environment, significant material losses, and disruption of living conditions for people. However, Kyrgyz legislation does not explicitly require planning authorities to consider the number of people, property, and economic sectors that may be exposed to any climate risks when developing planning instruments and defining zones of restricted development, such as flood zones and other zones with “unfavorable” conditions. The maps and tables developed by the Ministry of Emergency Situations, on the other hand, do indicate highly populated areas and potential impact objects.

Thus, while Kyrgyz legislation comprehensively defines “emergencies”, it falls short of requiring planning authorities or disaster risk management authorities to consider the potential exposure of

people, property, and economic sectors to climate risks, a critical component in effective risk and vulnerability assessments. While the current focus on populated areas and potential impact objects in emergency risk maps and tables is valuable, there is a need for an expanded legal framework to encompass a broader range of factors crucial for comprehensive emergency preparedness and response strategies

### **3.1.7. Publicly Accessible Hazard Maps**

As defined in subsection 3.1.5 above, the Department of Monitoring and Forecasting of Emergency Situations in the Ministry of Emergency Situations of Kyrgyzstan collects information and compiles hazard maps, which are publicly available in volumes on the dedicated government site ([www.mchs.gov.kg](http://www.mchs.gov.kg)). However, since there is no legal provision to compile such hazard maps, there is also no binding obligation to publish them. As such, there is a legal gap with respect to provisions on mandatory, publicly available hazard maps.

63. Volumes are available via the link: <https://www.mchs.gov.kg/ru/kyrgyz-respublikasynyn-aimagyndagy-korkunuchtuu-processterge-zhana-kubulushtarga-monitoring-zhurguzuu/>

64. Law No. 54 “On Civil Protection” (2018, May 24). <https://cbd.minjust.gov.kg/111787/edition/1240722/ru>

### 3.1.8.Regular Review of Hazard Maps

As outlined in both sub-sections 3.1.5 and 3.1.7, Kyrgyz legislation does not impose a legal requirement for the creation and publication of hazard maps. Consequently, there are not any provisions for their periodic review. This situation highlights the need for establishing legal obligations that mandate the development, publication, and regular reassessment of hazard maps.

### 3.1.9.Climate Vulnerability Assessment of Plans and Infrastructure

As outlined in sub-section 2.1.5, environmental impact assessments (EIA) are applied to the master plans of cities and populated areas, requiring the examination of potential adverse effects of planned activities on the environment and related socio-economic aspects. However, existing urban planning legislation only provides generic guidelines for including environmental information and lacks specific attention to climate change concerns.

## 3.2. Identification and Prioritization of Adaptation Options

Kyrgyz law and policy on climate change is in the developmental stage, specifically with respect the elaboration of the National (Climate) Adaptation Plan, which is being supported by UNDP.<sup>65</sup> The national plan contains adaptation plans for four priority sectors, and a program for integrating them into sectoral strategies and plans is to be developed. Moreover, adaptation plans for the three southern regions of the country will be formulated and integrated into local development plans. Additionally, eight pilot projects will be launched to attract funding.<sup>66</sup> However, at this stage there is no legal framework to guide the development and implementation of adaptation plans.

Presidential Decree No. 77 of 2021, titled “On measures to ensure environmental safety and climate sustainability of the Kyrgyz Republic,”<sup>67</sup> is the sole legal instrument that outlines the adaptation-related tasks assigned to the Kyrgyz Republic government, including:

- Mitigating the negative impact of air pollution on public health.
- Minimizing the adverse effects of wastewater on the environment and ensuring glacier

protection.

- Restoring natural ecosystems and safeguarding unique biodiversity.
- Ensuring chemical and radiation safety.
- Improving soil fertility.

Thus, although there are steps being made towards the development of climate change legislation in Kyrgyzstan, a comprehensive legal framework is yet to be established. Once the National Adaptation Plan is developed and endorsed by law, it will serve as a crucial foundation for more comprehensive climate change legislation and also provide the basis for identifying and prioritizing adaptation options in the urban context.

## 3.3. Implementation of Identified Adaptation Options

The National Adaptation Plan is set to be the cornerstone of a comprehensive approach to addressing climate change in Kyrgyzstan through the identification, prioritization and implementation of adaptation options. Nonetheless, there are still some relevant provisions in Kyrgyz legislation that require the implementation of adaptation measures. These measures include restrictions to land use and development, riparian setbacks (“water protection zones”), water protection

65. Climate scenarios for Kyrgyzstan: how the weather will change before the end of the century. (2023, August 14). [https://kaktus.media/doc/485024\\_klimaticheskie\\_scenarii\\_dlia\\_kyrgyzstana\\_kak\\_izmenitsja\\_pogoda\\_do\\_konca\\_veka.html](https://kaktus.media/doc/485024_klimaticheskie_scenarii_dlia_kyrgyzstana_kak_izmenitsja_pogoda_do_konca_veka.html)

66. National Adaptation Plan (Kyrgyzstan). <https://mnr.gov.kg/ru/page/nap>

67. President's Decree No. 77 “On measures to ensure environmental safety and climate sustainability of the Kyrgyz Republic”. (2021). <https://cbd.minjust.gov.kg/430478?cl=ru-ru>

schemes, and zoning for the placement of essential infrastructure.

### 3.3.1. Restrictions to Land Use and Development

The Urban Law Module of the LCCTK highlights the need to keep hazard-prone areas free from use and development through restrictions based on the results of climate risk and vulnerability assessments. As described in subsection 3.1.1, the comprehensive territory assessment scheme is used at the regional level to delineate unfavorable and least favorable zones for residential, civil, and industrial construction based on, among other things, natural conditions.<sup>68</sup> These provisions promote the adaptation of urban forms and future urban development to changing climatic conditions, risks and vulnerabilities. This emphasizes the utility of a cohesive approach to addressing climate challenges in the development and management of urban areas.

### 3.3.2. Public Land Buffer

A public land buffer serves as a mechanism to deter development near areas susceptible to adverse climatic impacts and natural hazards. By establishing a designated zone adjacent to such

areas, it acts as a protective barrier, mitigating the potential risks associated with development in the vicinity of environmentally sensitive or high-risk areas. This zoning strategy aims to safeguard ecosystems, enhance resilience against natural threats, and ensure the sustainable use of land resources. It plays a crucial role in urban planning and environmental conservation, contributing to the overall resilience and long-term well-being of both communities and natural landscapes.

Kyrgyz legislation<sup>69</sup> uses the term “buffer zone,” to designate an area that usually surrounds or borders the main zone. However, the primary objective of buffer zones under Kyrgyz law is to facilitate scientific research and regulate the use of agricultural lands, rather than to protect hazardous or climatically vulnerable zones.

### 3.3.3. Riparian Setbacks

Riparian setbacks provide a buffer area along riverbeds to prevent at-risk waterfront development that can also harm delicate riparian ecosystems. In Kyrgyz law, riparian setbacks are referred to as “water protection strips” and established through the designation of “water protection zones”. Water protection strips must be free of development and covered with meadows

and woody-shrubby vegetation to preserve the ecological integrity of waterfront areas and to prevent construction in areas prone to risks such as erosion and flooding. These setbacks also serve as a protective buffer against potential hazards, such as storm surges, flooding, and soil erosion. The vegetation coverage requirement also helps prevent erosion, maintain water quality, and support ecological diversity. The size of the setback varies from 30 to 100 meters depending on the volume of the water body.

### 3.3.4. Coastal Setbacks

Coastal setbacks are similar to riparian setbacks, with the fundamental difference being that coastal setbacks are made to protect coastal ecosystems (ocean, sea or lake) while riparian setbacks are made to protect river ecosystems. Being a landlocked country, coastal setbacks in Kyrgyzstan refer to buffer areas along lake coastlines. These setbacks are likewise captured under Kyrgyz law under “water protection strips” and “water protection zones”. The Regulations on Water Protection Zones and Strips of Water Bodies (1995)<sup>70</sup> set the width of the water protection zone for lakes, ponds and reservoirs between 100 to 500 m depending on the reservoir volume, as seen in the table below:

68. SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

69. Law “On Specially Protected Natural Territories”. (2011). <https://cbd.minjust.gov.kg/203262>

70. Regulations on Water Protection Zones and Strips of Water Bodies in the Kyrgyz Republic. (1995). <https://cbd.minjust.gov.kg/36359>



Reservoir volume	Width of the water protection zone, m
up to 10 million cubic meters	100 m
up to 100 million cubic meters	200 m
up to 1000 million cubic meters	300 m
more than 1000 million cubic meters	500 m

**Table 1.** The width of the water protection zone for lakes, ponds and reservoirs under the 1995 Regulations on Water Protection Zones and Strips of Water Bodies

The minimum width of the water protection zone along rivers is determined on both banks from the average multi-year water level for rivers of a given length and varies from 50 to 150 m as follows:

River length	Width of the water protection zone, m
less than 10 km	50 m
from 10 to 50 km	75 m
from 50 to 100 km	100 m
more than 100 km	150 m

**Table 2.** The width of the water protection zone along rivers under the 1995 Regulations on Water Protection Zones and Strips of Water Bodies

For main and inter-farm canals, the minimum width

of the coastal setback is defined between 50 to 100m and depends on the volume of the channels:

For channels with bandwidth	Width of the water protection zone, m
from 5 to 10 cubic meters/sec	50 m
meters/sec 50 m from 10 to 20 cubic meters/sec	75 m
more than 20 cubic meters/sec	100 m

**Table 3.** The width of the coastal setback for main and inter-farm canals under the 1995 Regulations on Water Protection Zones and Strips of Water Bodies

Certain activities are prohibited in such water protection zones and adjacent water areas, including the placement of livestock complexes, industrial expansion, aviation-chemical work, and the installation of containers for fuel storage. Furthermore, the application of certain agricultural practices, such as aerial pesticide spraying, is restricted within 2000 meters of water protection zones. Prohibited activities additionally include the placement of unused pesticides, clearing of vegetation, washing wool, and discharging untreated wastewater into water bodies. Permitted activities within these zones include fish farming and reproductive facilities, contingent upon the results of an environmental

impact assessment. Temporary fish farming structures for breeding and reproduction, along with associated equipment, are also allowed.

The establishment of coastal setbacks is a crucial aspect of urban planning that plays a significant role in climate change adaptation. They serve as a protective buffer against potential hazards and vulnerabilities associated with climate change.

By prohibiting certain activities within these zones, the regulations contribute to the resilience of vulnerable areas. Moreover, permitting defined controlled activities underscores the importance of sustainable land use practices in the face of evolving environmental challenges. In the context of climate change and urban planning, these regulations offer a proactive approach to safeguarding both natural resources and communities.

### 3.3.5.Integrated Coastal Zone Management Plans

Integrated coastal zone management plans serve as policy instruments to guide activities in coastal zones and prioritizing sustainability in coastal areas. Despite only 4.3% of the national territory being covered by water bodies, Kyrgyz legislation mandates the development of coastal zone management plans or, as they are called under the

Kyrgyz legislation, water protection schemes.<sup>71</sup>

These schemes aim to maintain favorable hydrological conditions, enhance sanitation, and optimize water resource use. Additionally, they include measures to protect water bodies from pollution and depletion. The law<sup>72</sup> permits the operation of existing facilities within water protection zones, contingent on adherence to the provisions outlined in the water protection scheme.

### 3.3.6. Location of Essential Infrastructure

Urban planning frameworks must guarantee the placement of critical infrastructure outside high-risk zones vulnerable to the impacts of climate hazards or prone to disaster. This approach is vital for enhancing resilience and minimizing potential damage to essential facilities in the event of adverse events.

As stated in subsections 3.1.1 and 3.1.4, “unfavorable” and “less favorable” zones for residential, civil, and industrial construction

are designated at the regional level based on natural conditions and other factors. In this way, Kyrgyz legislation recognizes the importance of delineating high-risk areas for development, however, the law doesn’t fully restrict the construction in such zones. Instead, it states that urban planning and development projects in such areas must incorporate engineering protection against flooding, submersion, mudflows, avalanches, landslides, and collapses.<sup>73</sup>

For example, buildings and infrastructure that are situated in coastal zones require protection against flooding and submersion caused by floodwaters, wind-driven water surges, and groundwater, which can be achieved through embankment measures.<sup>74</sup> To protect existing development in zones characterized by mudflow-hazards, the law states that it is necessary to maximize forest conservation, planting woody and shrubby vegetation, terracing slopes, reinforcing settlement-bearing riverbanks, constructing dams and reservoirs in the settlement formation zone, establishing

settlement-directing dams, and implementing drainage channels on the sediment transport cone.<sup>75</sup> In areas undergoing erosion processes resulting in gully formation, the law highlights the need to organize surface runoff, and fortify gully beds, terraces, and afforest slopes. In certain cases, the complete or partial elimination of gullies by installing them with stormwater and drainage collectors is permitted.<sup>76</sup>

In urban areas and settlements susceptible to landslides, initiatives should include the regulation of surface runoff, interception of groundwater flows, preservation of the natural buttress of the landslide massif to prevent its degradation, improvement of slope stability using mechanical and physicochemical methods, terracing of slopes, and planting greenery.<sup>77</sup>

The aforementioned details primarily apply to urban development in general, including the installation of essential urban infrastructure. Moreover, the 2016 Code of Regulations for the planning and development of rural settlements in the Kyrgyz Republic. Impose additional

71. Regulations on Water Protection Zones and Strips of Water Bodies in the Kyrgyz Republic. (1995). <https://cbd.minjust.gov.kg/36359>

72. Ibid.

73. Paragraph 11.1(2) of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

74. Paragraph 11.5 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

75. Paragraph 11.6 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

76. Paragraph 11.7 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

77. Paragraph 11.8 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

restrictions on the placement of “industrial” infrastructure, which includes essential infrastructure<sup>78</sup> This law, which only applies to rural areas, prohibits the construction of essential infrastructure in zones prone to landslides, mudflows, snow avalanches, and those directly adjacent to seismic faults.

As can be seen, urban legislation in Kyrgyzstan aims to achieve a balance between promoting development and safeguarding against natural hazards. With respect to “industrial” infrastructure in rural areas, the law prohibits construction in areas prone to natural hazards. UN-Habitat recommends the “no new development areas” approach to enhance resilience and minimize potential damage in vulnerable zones. This means prohibiting new construction and development in areas prone to natural disasters or other risks. In general, this aligns with the principle that urban planning frameworks should ensure critical infrastructure is located outside high-risk zones.

### 3.3.7.Capacity of Water Infrastructure

Elevated precipitation levels is a prominent climate hazard in Kyrgyzstan, which highlights the need for effective water infrastructure. Heavy precipitation can result in costly damage

to buildings and infrastructure and also have significant secondary economic impacts due to business and traffic interruption caused by power, data, and telecom cuts. Additionally, intense rainfall poses environmental and health risks in areas with insufficient water drainage capacity. This is because stormwater can enter drinking water pipelines or overwhelm the sewer system to the extent that a mixture of stormwater and wastewater must be discharged directly into the sea or river system without undergoing treatment beforehand. Thus, it is crucial for the planning of sewerage systems, storm drains, and wastewater treatment plants to be based on predicted rainfalls, flooding, and densification. In Kyrgyzstan, the SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation” mentions the broad obligation to systematically conduct research on the availability and utilization of water resources and environmental protection during the development of urban planning documentation.<sup>79</sup> This provision provides the foundation to incorporate more specific obligations for considering rainfalls, flooding, and densification when planning sewerage systems, storm drains, and wastewater treatment plants

### 3.3.8.Nature-Based Storm Water Management

Nature-based stormwater management involves utilizing natural soil infiltration or drainage through open waterways and ponds, as opposed to relying on artificial solutions like impermeable storm drains. The latter can exacerbate flooding in river systems, leading to more significant damage downstream. Introducing a legal mandate to incorporate nature-based stormwater management in areas with existing development or planned expansion could offer a more sustainable alternative for handling growing volumes of stormwater. According to a study conducted in 2020-2021,<sup>80</sup> none of the cities of Kyrgyzstan have stormwater sewer systems. Flash floods and active snowmelt runoff are discharged into the irrigation network, causing the siltation of canals and significant soil contamination. In some areas, surface runoff is discharged into a sewer network that is not prepared to receive runoff with sediment. The absence of a stormwater sewer system in Kyrgyz cities underscores the urgent need for regulatory measures to address the discharge of flash floods and snowmelt runoff into inappropriate networks. The introduction of legislation requiring nature-based stormwater management in Kyrgyzstan could help remedy

78. Code of Regulations for the planning and development of rural settlements in the Kyrgyz Republic. (2016). <https://cbd.minjust.gov.kg/200090?cl=ru-ru>

79. paragraph 20 of SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

80. Problems of Formation and Development of Engineering Transport Infrastructure of Cities of the Kyrgyz Republic. (2020-2021). [https://kstu.kg/fileadmin/user\\_upload/8\\_2020-2021\\_problemy\\_formirovaniya\\_i\\_razvitiya\\_inzhenerno-transportnoi\\_infrastruktury\\_gorodov\\_kyrgyzskoi\\_respubliki\\_01.pdf](https://kstu.kg/fileadmin/user_upload/8_2020-2021_problemy_formirovaniya_i_razvitiya_inzhenerno-transportnoi_infrastruktury_gorodov_kyrgyzskoi_respubliki_01.pdf)

these sewage and drainage issues affecting urban and peri-urban areas across the country.

### **3.3.9.Climate Vulnerability in Land Information Systems**

Climate risks can be mitigated through heightened awareness of the hazards linked to specific areas. One of the most effective mechanisms to achieve this is by integrating exposure to climate hazards into land information systems. Vulnerability information may encompass details about low-elevation coastal zones, flood plains, fire-prone areas, zoning, and restrictions on development and land use. In Kyrgyzstan, as will be described in subsection 3.6.3, there is an overarching obligation for the government to maintain the land information system. However, there is no legal obligation to record information related to the vulnerability of land parcels or zones to climate hazards.

### **3.3.10.Evacuation Routes and Low-Risk Area**

Adaptation planning requires accounting for extreme situations in which people may need to be evacuated from high-risk areas. Urban plans, therefore, must include provisions for establishing well-defined and accessible evacuation routes, as

well as for the identification of safe locations that can serve as temporary or even medium-to-long-term settlements. In Kyrgyzstan, this obligation is currently absent from the urban law framework, which is largely attributable to the siloed operation of urban planning and emergency management law and policy. Such an approach results in a lack of cohesive strategies to address the potential need for evacuation in the face of climate-related risks.

### **3.4. Adaptation of Slums and Vulnerable Settlements**

Slums, which are defined by UN-Habitat as those where the inhabitants suffer from one or more of the following: lack of access to improved water sources, lack of access to improved sanitation facilities, lack of sufficient living area, lack of housing durability, and lack of security of tenure, exist in Kyrgyzstan primarily around the capital, Bishkek, where approximately 2.4% of the urban population resided in 2020.<sup>81</sup> Nevertheless, no legislation recognizing or addressing informal settlements and slums has been adopted in Kyrgyzstan.

This can be attributed to several factors, including challenges in defining and categorizing these areas, as well as the complex and multifaceted nature of the issues they present. The absence of specific regulations raises concerns about the potential neglect of the unique needs and vulnerabilities of residents in these areas. It highlights the need for the law to adopt a targeted and comprehensive approach that addresses socio-economic disparities and improves living conditions for these communities. Acknowledging and prioritizing the development of tailored policies and initiatives is crucial for fostering inclusivity and enhancing the overall quality of life for those residing in these underprivileged areas.

### **3.5. Planned Relocations**

Climate risk and vulnerability assessments can indicate that in certain circumstances the most effective protective measure for a specific community is their relocation to a new area or region that is safe from climate hazards. Planned relocation encompasses “a process in which individuals or groups are either assisted or voluntarily move away from their current homes or temporary residences, settle in a new location, and are provided with the necessary conditions for rebuilding their lives.”<sup>82</sup>

81. Proportion of urban population living in slums - Sustainable Development Goals - UN Economic Commission for Europe. (n.d.). <https://w3.unece.org/SDG/ru/Indicator?id=51>

82. UNHCR, IOM, Institute for the Study of International Migration, Georgetown University. A toolbox: Planning Relocations to Protect People from Disasters and Environmental Change. (n.d.). <https://www.refworld.org/pdfid/596f1574.pdf>



In Kyrgyzstan, planned relocations are foreseen in the Regulations “On the Comprehensive Protection of the Population and Territory of the Kyrgyz Republic from Emergencies Concept for 2018-2030.”<sup>83</sup> The regulations prescribe actions for disaster management of the following emergencies: earthquakes, avalanches, landslides, mudflows, floods, and seasonal floods, and flooding. Moreover, for each emergency, the regulations categorize actions into three groups: daily routine, increased readiness, and state of emergency (see Table 4):

Type of emergency	Modes		
	daily routine	increased readiness	state of emergency
Earthquakes	<ul style="list-style-type: none"> <li>• Develop guidelines for better seismic resilience in construction and infrastructure.</li> <li>• Strengthen compliance requirements with construction norms.</li> <li>• Reconstruct high-risk buildings in critical condition.</li> <li>• Prepare evacuation resources, food, and medications.</li> <li>• Ensure access to medical facilities and essential services.</li> <li>• Establish tent camps for affected residents in advance.</li> <li>• Prepare forces and resources for seismic reconnaissance.</li> <li>• Train the population in self-help and mutual assistance.</li> <li>• Increase public awareness.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare evacuation resources, food, and medications.</li> <li>• Train operational groups, rescue teams, and reconnaissance forces.</li> <li>• Set up tent camps for those affected.</li> <li>• Ensure relevant services and units are ready without interruption to their main activities (according to the plan).</li> <li>• Alert the population using electric sirens, radio broadcasting, and departmental communication means, including mobile alerting vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>• Population alerting.</li> <li>• Evacuation from earthquake-prone areas using various methods.</li> <li>• Conducting rescue and emergency operations.</li> </ul>

83. Regulations “On the Comprehensive Protection of the Population and Territory of the Kyrgyz Republic from Emergencies Concept for 2018-2030. (2018) <https://cbd.minjust.gov.kg/11990?refid=1205614>

<p>Avalanches, landslides, mudflows, floods, and seasonal floods</p>	<ul style="list-style-type: none"> <li>• Implement coastal reinforcement on rivers and lakes.</li> <li>• Strengthen bridges in potential flood zones.</li> <li>• Monitor hazardous areas.</li> <li>• Relocate residents from high-risk zones.</li> <li>• Construct engineering protective structures for flood and landslide defense of settlements and economic facilities.</li> <li>• Build avalanche protection structures (galleries, snow-retaining shields, etc.).</li> <li>• Release artificial avalanches through artillery bombardment or controlled explosions.</li> <li>• Observe precipitation intensity, snowmelt, and water level changes in rivers and lakes.</li> <li>• Regulate flood discharge using reservoirs.</li> <li>• Construct permanent and emergency protective dams and barriers for flood and landslide protection.</li> <li>• Prepare basins and create artificial channels to divert floodwaters and debris flows.</li> <li>• Use territory filling methods.</li> <li>• Prepare watercraft in advance, plan evacuations for residents in potentially inundated areas, and provide essential services in resettlement areas.</li> <li>• Implement enhanced land use practices and slope stabilization to mitigate landslide hazards.</li> <li>• Train the population.</li> </ul>	<ul style="list-style-type: none"> <li>• Notify the population through electric sirens, radio broadcasting, departmental communication, and mobile alerting vehicles.</li> <li>• Partially evacuate residents from landslide, flood, avalanche, and mudslide-prone areas.</li> <li>• Transition observation and laboratory control network institutions to enhanced operating modes.</li> <li>• Evacuate agricultural animals and remove valuable equipment from threatened areas.</li> <li>• Prepare vehicles for population evacuation and valuable transportation.</li> <li>• Initiate controlled avalanches in specified directions.</li> <li>• Implement slope monitoring systems (if necessary).</li> <li>• Monitor snowmelt intensity, precipitation, and water levels in rivers and lakes.</li> <li>• Organize efforts to reinforce shores, bridges, and construct protective structures for settlements and economic facilities.</li> <li>• Deploy forces and resources to affected areas and mobilize assets for emergency response.</li> <li>• Ensure relevant services and units are prepared without disruption to their main activities (according to the plan).</li> <li>• Verify received information with relevant authorities.</li> </ul>	<ul style="list-style-type: none"> <li>• Rescue operations for people under avalanches and debris, evacuating them to safe areas.</li> <li>• Provide medical assistance and evacuate the injured to medical facilities.</li> <li>• Restore access roads and establish routes to the emergency area.</li> <li>• Deliver water, food, and clothing to those affected.</li> <li>• Reconstruct roads and bridges.</li> <li>• Address emergencies in communal-energy networks and communication lines.</li> </ul>
--	--	---	--

Flooding	<ul style="list-style-type: none"> <li>• Reinforce coastlines along rivers and lakes.</li> <li>• Strengthen bridges in flood-prone areas.</li> <li>• Monitor high-risk zones.</li> <li>• Relocate residents from danger areas.</li> <li>• Construct protective structures for flood and landslide defense.</li> <li>• Build avalanche protection structures (galleries, snow-retaining shields, etc.).</li> <li>• Trigger artificial avalanches through artillery bombardment or controlled explosions.</li> <li>• Monitor precipitation, snowmelt, and water levels in rivers and lakes.</li> <li>• Regulate flood discharge using reservoirs.</li> <li>• Build permanent and emergency protective dams and barriers.</li> <li>• Prepare basins and create channels to divert floodwaters and debris flows.</li> <li>• Use territory filling methods.</li> <li>• Prepare watercraft in advance, plan evacuations, and provide essential services in resettlement areas.</li> <li>• Implement improved land use practices and slope stabilization to mitigate landslide risks.</li> <li>• Train the population.</li> </ul>	<ul style="list-style-type: none"> <li>• Notification, situation forecasting at different levels.</li> <li>• Mobilize Civil Defense, transport, medical, and public order protection forces, and resources.</li> <li>• Partially evacuate the population and relocate valuables from flood-prone areas.</li> <li>• Ready motor transport for population evacuation.</li> <li>• Safely shut down production, ensuring equipment protection.</li> <li>• Accelerate engineering works for water discharge channels preparation.</li> <li>• Force reservoir activation as per special order.</li> </ul>	<ul style="list-style-type: none"> <li>• Flood alert.</li> <li>• Monitor and control flood-prone areas and evacuation routes.</li> <li>• Partially evacuate the population and relocate valuables from areas susceptible to catastrophic flooding.</li> <li>• Mobilize transport for population evacuation.</li> <li>• Prepare for the safe shutdown of production and equipment protection.</li> <li>• Accelerate engineering works for water discharge channel preparation.</li> <li>• Force reservoir activation (by special order).</li> <li>• Form Civil Defense groups for emergency rescue and other urgent operations as directed by regional Civil Defense chiefs.</li> <li>• Search, rescue, and evacuate people and livestock in flooded areas to safe zones.</li> <li>• Provide medical and other types of assistance.</li> </ul>
----------	--	---	---

**Table 4.** Actions carried by the authorities in case of emergencies under the Regulations “On the Comprehensive Protection of the Population and Territory of the Kyrgyz Republic from Emergencies Concept for 2018-2030”

Furthermore, the *protocol* for evacuating and resettling populations was formalized in 2019 through the “Procedure for evacuation and resettlement of the population, as well as the evacuation of material and cultural values to safe areas”.<sup>84</sup> The document defines safe areas for population relocation, the procedures for organizing such evacuation and resettlement, as well as financing sources.

### 3.5.1.Land for Relocations

Kyrgyz legislation provides for the evacuation and relocation of people from hazardous areas to temporary accommodation centers prepared in advance for priority types of life support (e.g., tent camps or social infrastructure establishments,<sup>85</sup> such as educational institutions, healthcare facilities, community centers, libraries, parks and recreation centers). As outlined in the table above, the law obliges authorities to, inter alia, establish tent camps for affected residents in advance, plan evacuations for residents in potentially inundated areas, provide essential services in resettlement areas, prepare vehicles for population evacuation, and partially evacuate the population and relocate valuables from flood-prone areas. As such, while the law does not explicitly assign authorities the responsibility to identify and designate land for relocation or resettlements, this is

implicitly required by calling for the organization of evacuation transport, the establishment of temporary settlements in advance, and the servicing of resettlement areas.

### 3.5.2.Safety of the Relocation Site

Planned relocation might prove counterproductive if the new location exposes resettled groups to the same or new climate hazards. Given that planned relocations frequently disrupt housing, livelihoods, and social networks, it is imperative to guarantee that the relocated community doesn’t encounter additional climate risks or is compelled to relocate once more due to other hazards. The “Procedure for evacuation and resettlement of the population [...] to safe areas” specifically mentions that those affected should be relocated to safe areas within the administrative boundaries of the Kyrgyz Republic, namely those that are located outside the zones of possible destruction, emergencies, possible dangerous chemical contamination, catastrophic flooding and dangerous radioactive contamination.

### 3.5.3.Resettled and Host Communities’ Participation

It is crucial to consult affected communities first and foremost on the decision to relocate. Where possible, it is also recommended to consult the groups to be resettled on site selection, timing and the modalities of relocation. It is also essential that host communities are consulted before making resettlement decisions. The failure to do so can contribute to tension and even conflict between host and resettled communities. Kyrgyz legislation, however, fails to include such provision for planned relocations.

### 3.5.4.Relocation Site Facility

Relocation sites must have appropriate land and housing, public services such as water, sanitation, electricity, and transportation, as well as access to social services like education and healthcare, and sources of income, livelihood, and employment opportunities. Kyrgyz legislation enshrines the obligation to equip temporary accommodation centers with life support materials such as water, food, medications, and clothing in advance of relocations. As seen in the table above, the Regulations “On the Comprehensive Protection of the Population and Territory of the Kyrgyz

<sup>84</sup>. Procedure for the evacuation and resettlement of the population, as well as evacuation of material and cultural values to safe areas. (2019). <https://cbd.minjust.gov.kg/13693?refid=947851>

<sup>85</sup>. based on the interview conducted on October 30, 2023, in Naryn, Kyrgyzstan



Republic from Emergencies Concept for 2018-2030” require the competent authorities to ensure access to medical facilities and essential services and provide essential services in resettlement areas.

### 3.6. Security of Tenure

Weak land tenure undermines climate adaptation in urban areas by leaving affected communities susceptible to eviction and displacement, forcing communities into high disaster-risk zones, limiting their access to public infrastructure and services, and discouraging investments in resilient housing. Moreover, the lack of recognized land rights may exclude informal settlement residents from compensation or disaster-recovery funding, potentially undermining planned relocations. For these reasons, security of tenure is essential for successful adaptation and inclusive urban development.

#### 3.6.1. Recognized Tenure Forms

In Kyrgyzstan, the principle of equal recognition for all types of land ownership is established. According to the Kyrgyz Constitution<sup>86</sup> and the

1999 Land Code,<sup>87</sup> lands can be held in various forms, including state, municipal, private, and others. This means that the government of the Kyrgyz Republic (for state lands), the executive and administrative body of local self-government (for municipal lands within rural districts), local self-government bodies (for municipal lands within city boundaries), as well as individuals and legal entities in the Kyrgyz Republic (for private ownership), all have the authority to manage land.

Nevertheless, the Urban Law Module of the LCCTK promotes the idea of a “continuum of land rights.” This concept acknowledges a diverse range of rights, spanning from informal rights at one end of the spectrum to formal rights at the other. In the middle, there exist occupancy rights, customary rights, leasehold rights, group tenure, and more, encompassing both individual and collective rights. Kyrgyzstan, in terms of the practical implementation of the “continuum of land rights” advocated by the Urban Law Module, defines that the use of a land plot may be indefinite (without specifying a term) or fixed-term (temporary, limited for up to 50 years),<sup>88</sup> i.e. land lease. Therefore, Kyrgyzstan’s implementation of the continuum

of land rights provides flexibility in land tenure arrangements, accommodating various forms of land use and ownership. This approach aims to enhance land security, support sustainable urban development, and address the needs of diverse communities by recognizing both temporary and permanent land rights.

#### 3.6.2. Land Tenure Regularization

Land regularization promotes security of tenure by incorporating informal tenure and unauthorized settlements into the official, legal, and administrative systems of land management. However, the concept of informal settlements/slums/underprivileged areas is not reflected in the legislation of Kyrgyzstan.

#### 3.6.3. Multiple Tenure Forms and Land Information System

Recording land rights in public records is a vital aspect of ensuring secure tenure. It provides beneficiaries with certainty and security, establishing a legitimate expectation of legal protection. Article 9 of the Kyrgyz Land Code specifies that the creation of land plot rights, their transfer, transition, imposition of restrictions,

86. Constitution of the Kyrgyz Republic. (2021). <https://www.gov.kg/ru/p/constitution>

87. Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

88. Article 9 of the Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

easements, mortgages, and termination are subject to state registration in the unified state register.

The 1998 Law “On the state registration of rights to real estate and transactions with it”<sup>89</sup> specifies that national governing bodies, local registration, and other bodies are required to maintain a Unified State Register of Rights to Real Estate, where all information on immovable property is stored. Furthermore, the “Regulations for the state registration of rights and encumbrances (restrictions) on real estate and related transactions” stipulate the process for registering private ownership rights over a land plot.<sup>90</sup>

Thus, the system of recording land rights in Kyrgyzstan is enforced and is designed to safeguard the interests of property owners and contribute to a stable and secure environment for land tenure in the country.

### 3.6.4. Evictions

Forced evictions involve the involuntary, permanent, or temporary displacement of individuals, families, and communities from their homes or land without the provision of legal or other protection. Evictions may exacerbate the negative effects of climate change on affected

communities, as they not only deprive people of housing but also threaten their access to health, education, food, livelihoods and even the right to life, especially when carried out through violence. Legal frameworks can limit the opportunities for forced evictions to take place by granting legal security of tenure to all individuals.

Moreover, the law should prescribe the process for legal evictions applicable to situations where eviction is necessary and legally justified. The process should incorporate specific safeguards such as consultations with the affected parties and the establishment of effective recourse mechanisms for those adversely impacted by an eviction decision. The legal stipulations should also clearly outline the procedures for conducting evictions.

The legal framework in Kyrgyzstan comprehensively delineates grounds for evictions, including the improper use of a land plot, the acquisition for state and public needs, and prolonged non-utilization for both agricultural and non-agricultural purposes. Evictions may also be triggered by the failure to meet land tax deadlines, neglecting insurance contributions, or the cancellation of subsoil exploitation rights due to non-use by a state body. Additionally, the

non-payment of lease fees for state or municipal land within specified time frames and the non-specific utilization of state or municipal land for state mortgage housing loans with complete state participation are identified as grounds for eviction.<sup>91</sup>

With respect to procedure, the law provides that evictions should only be implemented following written notice to the landowner or land user, addressing the rectification of existing violations and initiating administrative proceedings against individuals or legal entities. The notification from the authorized body should outline:

- The violation committed by the land plot owner or land user and the necessary corrective measures.
- The deadlines for rectifying the violation.
- The consequences of non-compliance with the warning.
- The procedure for appealing the warning by the land plot owner or land user.<sup>92</sup>

Thus, while court-ordered evictions are applied in Kyrgyzstan, they still lack essential safeguards, such as providing alternative accommodation for those who are evicted. The absence of comprehensive protective measures

89. The Law “On the state registration of rights to real estate and transactions with it”. (1998). <https://cbd.minjust.gov.kg/160?refid=1279572>

90. Regulations for the state registration of rights and encumbrances (restrictions) on real estate and related transactions. (2011). <https://cbd.minjust.gov.kg/94056?refid=1237276>

91. Article 65 of Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

92. Article 66 of Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

raises concerns about the potential adverse consequences of forced displacement, especially for vulnerable groups like women, children, the elderly, and people with disabilities. Additionally, the legal framework falls short in granting affected individuals' priority in demolishing and salvaging their property, and it lacks specific measures to ensure effective protection for these vulnerable groups. There is a crucial need to enhance the legal provisions to prioritize the well-being and rights of those affected by eviction, ensuring a more just and humane process.

### 3.6.5.Land Acquisition and Compensation

Public authorities occasionally require the acquisition of land for various purposes. This could include, for example, expanding infrastructure, providing affordable housing, or establishing public spaces. Under Kyrgyz law, a land plot can be expropriated for public or state purposes based on an agreement between the authorized body and the land plot owner or land user and upon a court decision that guarantees just and advance compensation for the property's value and losses resulting from its alienation.<sup>93</sup>

The compensation amount for the land plot should encompass the market value of the land plot's rights and the constructions upon it, along with the losses suffered by the owner or land user due to the cessation of land plot rights, e.g. losses associated with the early termination of commitments to third parties. In cases where a land plot is expropriated for state or public purposes with the agreement of the land plot owner or land user, an alternative land plot may be allocated to them, with the value of its rights factored into the final compensation award.<sup>94</sup>

These provisions establish a structured process for land expropriation, which balances the needs of public authorities with the protection of individual property rights. The comprehensive criteria for determining the redemption price consider not only the market value of the land plot and its structures, but also the associated losses incurred by the owner or land user. Additionally, the option to allocate an alternative land plot, with its value subtracted from the compensation award, demonstrates a commitment to fairness and accommodation in the land acquisition process. This ensures that while public authorities have the means to acquire land for vital projects, property

owners and users are adequately compensated and provided with viable alternatives, contributing to a more equitable and transparent land acquisition system in the country.

### 3.6.6.Land and Property Dispute Tribunal

Efficient dispute resolution is vital for upholding rights, promoting institutional accountability for both procedural and substantive rights and facilitating the efficient implementation of plans, upgrading informal settlements, planned relocations, and the execution of adaptation options. In Kyrgyzstan, land disputes account for at least 30% of the workload of Kyrgyz courts<sup>95</sup> and are settled by the authorized state body that granted the land plot. If there's a disagreement with the decision of this authorized state body,<sup>96</sup> land disputes go through legal proceedings in administrative courts.<sup>97</sup> Should the disputes involve the expropriation and termination of the right to a land plot, the dispute falls under the jurisdiction of an administrative court.<sup>98</sup>

Consequently, though there are no land courts in Kyrgyzstan, the integration of land dispute

93. Article 15 of the Constitution of the Kyrgyz Republic. (2021). <https://www.gov.kg/ru/p/constitution>

94. Article 68 of Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

95. Scalise, E., 2023. Women's Land Rights in the Kyrgyz Republic. Securing Women's Resource Rights Through Gender Transformative Approaches. Bogor, Indonesia: Centre for International Forestry Research (CIFOR) and Nairobi: World Agroforestry (ICRAF) International Fund for Agricultural Development (IFAD). [https://www.cifor.org/publications/pdf\\_files/Books/Socio-legal-review-Kyrgyz.pdf](https://www.cifor.org/publications/pdf_files/Books/Socio-legal-review-Kyrgyz.pdf)

96. Article 119 of Land Code of the Kyrgyz Republic. (1999). <https://cbd.minjust.gov.kg/8>

97. Consideration of Land Disputes by Local Courts. (2022). <http://admin-vshp.sot.kg/public/sites/3/2019/11/Zemelnye-spory-russkij.pdf>

98. For more information about the judicial system in Kyrgyzstan, see Chapter 3 of the Naryn Town Profile Report.

resolution within the broader administrative court system demonstrates a commitment to a comprehensive, streamlined and specialized approach to dispute resolution. This approach ensures that disputes related to land rights receive the attention they deserve, aligning with principles of fairness, transparency, and legal expertise. Nevertheless, the establishment of specialized courts dealing specifically with land-related matters would undoubtedly further enhance the legal landscape in Kyrgyzstan by cultivating deeper expertise among judicial officers in the intricacies of land laws, property rights, and related issues. This would provide a clear path for addressing land-related disputes, and offer a more streamlined and efficient dispute resolution mechanism.

### **3.6.7. Alternative Dispute Resolution Mechanisms**

In addition to the formal justice system, the legal framework should recognize and encourage alternative dispute resolution. The traditional court system often entails prolonged and costly processes with intricate procedures, limiting access for a substantial portion of the population. As stated in subsection 3.6.6, the resolution of land-related matters occurs before judicial proceedings and is conducted by the authorized

state body that granted the land plot. Only in instances of land expropriation and termination of land plot rights does the case proceed directly to court.

Thus, in Kyrgyzstan, there is, in some cases, an alternative dispute resolution mechanism, allowing for the resolution of land-related disputes outside the conventional courtroom setting. This approach provides the parties involved with greater flexibility and often leads to swifter, more cost-effective resolutions.

## **3.7. Implementation of Climate Adaptation Strategies through Development Approval**

Development control is the systematic process through which authorities regulate the character and scale of land development. Its purpose is to ensure that development takes place in suitable areas, respects environmental protection measures and natural resource conservation, and guarantees the structural integrity and servicing of buildings with essential services and amenities. Developers should be required to seek authorization through the application for a development permission prior to undertaking any construction.

In this way, development permits guarantee the implementation, monitoring, and enforcement of planning and design standards for adapting to climate risks and vulnerabilities. They are the practical means for preventing development in high-risk areas by denying permission to uncompliant proposals, compelling developers to incorporate adaptation measures into their designs and championing environmental integrity. In Kyrgyzstan, the issuance of the development permissions is subject to the Regulation “On the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation”.<sup>99</sup>

### **3.7.1. Criteria for Approval and Adaptation**

For development control to effectively implement climate adaptation strategies and priorities, it must be integrated with legally approved urban plans, zoning regulations, and standards that are informed by relevant climate information. The criteria for development approval might, for example, stipulate that an application must demonstrate the site’s suitability for construction. It could also require developers to offer specific amenities that ensure the safety of occupants

<sup>99</sup> Regulation on the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation. (2021) <https://cbd.minjust.gov.kg/158396?refid=1078160>



in the event of a climate hazard. Additionally, approval criteria may mandate an EIA to prevent development that would destroy natural features crucial for adaptation.

However, in Kyrgyzstan, a legal framework addressing climate change has yet to be formally established, and the provisions that exist supporting adaptation (e.g., risk and vulnerability assessments and certain adaptation measures) are not incorporated into the legal framework for urban planning. As a result, there are no linkages between climate risks and development permissions. The only topics considered in the process of issuing development permits are the following:

- compliance with urban planning documentation and architectural and urban planning standards.
- the compliance of external engineering networks with the projects for the development of the engineering infrastructure of the settlement.
- compliance with legislation on the protection and use of historical and cultural heritage.
- improvement of the adjacent territory, the designed object's overall concept of urban improvement, and compliance

with architectural and urban planning requirements.<sup>100</sup>

- In case of non-compliance with regulatory and planning requirements, the territorial body for urban planning and architecture is empowered to make a reasoned decision refusing approval of the project's development application.<sup>101</sup>

Thus, the absence of an established climate change legal framework in Kyrgyzstan poses a significant challenge to the effective integration of climate adaptation priorities into development control processes. The existing criteria for issuing development permits lack explicit connections to climate considerations, as the urban planning framework primarily focuses on compliance with documentation, engineering infrastructure, and historical and cultural heritage protection. Without the incorporation of climate-related criteria, there is a missed opportunity to enhance the resilience of urban development and safeguard against climate hazards in Kyrgyzstan.

### 3.7.2. Developers' Contribution for Adaptation Infrastructure

Infrastructure plays a crucial role in supporting social and economic activities. This encompasses

various services such as transportation, water, waste management, communication, and energy infrastructure. In the face of climate change, it is imperative for infrastructure to not only withstand existing and future risks, but to also contribute to the resilience of populations, economies, assets, and livelihoods. To prevent undue strain on public resources, a portion of maintaining infrastructure can be transferred to developers during the approval stage of development. This transition can effectively safeguard against public financing of private development and ensure that developers bear the costs associated with their developments. In this respect, legal frameworks can empower authorities to impose charges on developers for the infrastructure expenses linked to development, either in monetary terms or through specific conditions tied to planning permission. Infrastructure costs may encompass various aspects such as the creation of green spaces, allocation of land for infrastructure, development of stormwater facilities, construction of sewage systems, and establishment of water infrastructure.

An example of this in the Kyrgyz legal framework is the requirement for developers to improve the municipal area around their construction sites.<sup>102</sup> In general, the "improvement" of municipal areas

<sup>100</sup>. paragraph 26 of Regulation on the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation. (2021). <https://cbd.minjust.gov.kg/158396?refId=1078160>

<sup>101</sup>. paragraph 27 of Regulation on the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation. (2021). <https://cbd.minjust.gov.kg/158396?refId=1078160>

<sup>102</sup>. Paragraph 14 of Regulation on the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation. (2021). <https://cbd.minjust.gov.kg/158396?refId=1078160>

involves groundwork engineering of the land for construction and road development, as well as infrastructure and network development, including water supply, wastewater management, power supply, gas supply, communication, irrigation, stormwater systems, and more. The developer is also responsible for clearing, draining, and landscaping the area, as well as sanitary cleaning. This is all aimed at enhancing the microclimate, safeguarding against air and water pollution, mitigating noise levels, and ultimately preparing the territory for construction and regular use.<sup>103</sup> Upon completion, the area adjacent to the construction site that has been improved by the developer is transferred to local authorities for further maintenance.

In this way, Kyrgyz legislation requires developers to contribute to infrastructure, which creates healthy, convenient, safe, and culturally enriched urban conditions for the population.

### **3.7.3. Compliance Monitoring and Adaptation**

A robust development control system must incorporate mechanisms to monitor the adherence of approved developments to their permit conditions. For example, legal provisions can mandate the appointment of a planning

inspector responsible for monitoring developer compliance with the granted permissions and associated conditions.

Kyrgyz legislation requires that, upon the completion of construction, the development is subject to a conformity assessment by the regional control and supervision department of the body authorized to carry out an inspection control.<sup>104</sup> This conformity assessment is mandatory for all developments except for individual housing construction. In this way, the post-construction phase of development involves a thorough examination to ensure that the facility aligns with the approved plans and meets the specified conditions, providing a critical quality check to uphold regulatory standards and enhance accountability.

### **3.7.4. Compliance Enforcement and Adaptation**

To ensure the effectiveness of development control in achieving its climate change adaptation objectives, the existence of enforcement mechanisms for compliance is crucial. These mechanisms are necessary in cases where developments deviate from the submitted application and fail to meet the specified conditions. In this respect, compliance can be

secured through the issuance of an “enforcement notice” to compel developers to rectify their constructions or grant authorities the right to enter the site and take steps to enforce the order, including disabling or removing equipment, machinery, tools, belongings, vehicles, or other objects that may be on site.

In Kyrgyzstan, if the construction is found to contradict the conditions of its development permit during the conformity assessment mentioned in subsection 3.7.3, then the permission will not be concluded, and the construction will not be registered in the property registry. This leads to the abandonment of unfinished and/or unapproved constructions, which raises significant environmental and societal concerns. Unfinished constructions, lacking proper enforcement and compliance, may contribute to vulnerabilities in the face of changing climate patterns. These incomplete structures could become more susceptible to weather-related damages, posing risks to both the environment and public safety. Additionally, once constructions have passed their conformity assessment, the law does not establish enforcement mechanisms that force developers to continue to follow the conditions of their development permit. The absence of a stringent enforcement mechanism not only hinders proper urban planning and

<sup>103</sup>. SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

<sup>104</sup>. paragraph 55 of Regulation on the procedure for issuing documents for the design, construction, and other modifications of real estate objects and assessing the compliance of completed construction objects put into operation. (2021). <https://cbd.minjust.gov.kg/158396?refid=1078160>

development but also exacerbates the challenges associated with climate adaptation and resilience. For this reason, it is crucial to enact additional mechanisms to enforce development compliance with development standards.

## Recommendations

Given that “emergencies” (natural hazards) have been identified as priority areas for climate change adaptation in the 2013 Regulation “On Approval of Priority Areas for Climate Change Adaptation in the Kyrgyz Republic until 2017,” there is a substantial opportunity to continue revising Kyrgyz legislation to meet its international commitments on combatting climate change and implement the best practices identified from the Urban Law Module of the LCCTK. To accomplish this, the following are recommended:

**Enhancement of climate risk and vulnerability assessments at the local level (3.1.1).** While the Kyrgyz legal framework provides for the obligation to conduct vulnerability assessments of natural disasters at the regional level, there is an opportunity for further enhancement by incorporating explicit requirements for climate risk assessments at the city and *aiyl aimak* (local) levels. This would ensure a more comprehensive and localized approach to climate adaptation and emergency preparedness, aligning with the need for tailored strategies to address specific

vulnerabilities at different administrative levels.

### **Forward-looking assessment of climate change-related risks in urban planning instruments (3.1.1).**

While Kyrgyz legislation provides for the consideration of some existing climate change-related vulnerabilities when drafting regional urban planning instruments, there is still a need to assess a broader set of future climate change-related risks. This will ensure that urban and territorial planning is not only responsive to current climate conditions, but also adaptive to the dynamic and evolving nature of climate change. Incorporating a forward-looking assessment of climate change-related risks in urban planning documentation is crucial for fostering sustainable development, resilience, and the well-being of communities. To address this gap, a supplementary provision should be incorporated into the existing Kyrgyz legal framework focusing on assessing the anticipated impacts of climate change on the territory and incorporating resilience measures to safeguard against future vulnerabilities. This forward-thinking approach involves considering factors such as rising temperatures, changing precipitation patterns, as well as increased frequency and intensity of extreme weather events. In addition to assessing vulnerabilities, the legal framework should also integrate adaptive strategies and measures into urban and territorial planning by requiring the identification of resilient

zones, the development of green infrastructure, and the promotion of sustainable land-use practices. Furthermore, the law could establish guidelines for constructing climate-resilient infrastructure and incentivize eco-friendly building practices.

### **Feedback from the participants of the workshop**

**held on June 14th, 2024:** Two participants from local authorities deemed this recommendation relevant to Kyrgyz legislation, arguing that all urban planning documentation should account for potential climate change risks and that city development should reflect this information. One participant from the national authorities stated that such assessments are already conducted, while another participant from local authorities considered the recommendation partially applicable. Three participants indicated that this was outside their area of expertise. Thus, the recommendation is seen as relevant and important by a portion of the participants, particularly those from local authorities, who recognize the need for urban planning to integrate climate change considerations. However, there is some disagreement on the matter among other participants.

**Enhancement of risk and vulnerability assessment techniques in the Kyrgyz planning framework (3.1.2).** To enhance the resilience of the Kyrgyz urban planning framework and address

the existing gaps in risk vulnerability assessments, it is advised to incorporate detailed provisions on the required actions, methods, and processes for conducting climate risk and vulnerability assessments during the development of urban and territorial plans. This may include risk mapping and scenario planning, community surveys, climate modeling, infrastructure assessment, and so forth. This will ensure a systematic and comprehensive evaluation of potential risks and vulnerabilities associated with urban development, considering diverse factors such as infrastructure, population density, and land-use patterns. Additionally, establishing clear linkages between urban planning and general emergency frameworks will contribute to a more integrated and effective approach to climate adaptation. This can be done by, inter alia, applying the Unified System of Integrated Monitoring and Forecasting of Emergencies in urban planning processes. This will not only improve coordination and information sharing between urban planning authorities and emergency management agencies, but it will also enable the utilization of resources and expertise from both sectors to their mutual benefit.

**Feedback from the participants of the workshop held on June 14th, 2024:** One participant from the national authorities considered this recommendation applicable to the Kyrgyz context, while two participants from the local authorities found it partially applicable. Four participants indicated that it was outside their area of expertise. Thus, the recommendation is viewed as applicable by some participants, particularly from the national authorities, while others from local authorities see it as only partially relevant. A significant number of participants lack the expertise to fully evaluate the recommendation.

**Incorporating community participation into the risk and vulnerability assessment processes with a strong emphasis on the inclusion of vulnerable groups (3.1.3).** To address the deficiencies in the existing legislation, it is recommended that the Kyrgyz legislation be amended to require a comprehensive vulnerability assessment that inclusively engages all stakeholders, particularly marginalized groups and communities with traditional knowledge. This amendment should explicitly outline specific mechanisms and requirements for community participation in vulnerability assessments, emphasizing the involvement of women, youth, older individuals, people with disabilities, and

communities with traditional environmental knowledge. This amendment will strengthen the assessment process by incorporating diverse perspectives and experiences, leading to more accurate and effective strategies for mitigating climate vulnerabilities.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from national and local authorities considered this recommendation applicable to the Kyrgyz context, while three participants found it inapplicable. Two participants considered it partially applicable, noting that it might be more suitable for small towns rather than large cities. Thus, the recommendation is seen as relevant by some authorities, particularly for smaller towns, but it faces skepticism or rejection from others, especially concerning its applicability to larger cities.

**Formalizing the creation of climate hazards maps (3.1.5, 3.1.7, 3.1.8).** To address the current legislative gaps and enhance the effectiveness of hazard mapping in Kyrgyzstan, it is recommended that the existing legislation be amended. Specifically, legal provisions should be introduced to mandate the creation, publication, and periodic review of climate hazard maps. This amendment will ensure the development of publicly accessible and accurate hazard maps, providing valuable insights into various risks across different



territories. These maps will also serve as a crucial tool for enhancing community preparedness and resilience. Additionally, incorporating a legal obligation for the regular reassessment of climate hazard maps will contribute to the ongoing improvement and relevance of the hazard mapping process. The amendment should also explicitly outline the requirements for making hazard maps publicly accessible, reinforcing transparency, and facilitating informed decision-making within the community. Furthermore, the proposed amendments should emphasize the inclusion of parameters such as the number of people, types of property, and economic sectors susceptible to climate-related risks on the hazard maps/tables. This expanded scope will provide a more comprehensive foundation for adopting targeted adaptation measures and enable authorities to better prioritize their resources. Moreover, an integrated approach is needed to incorporate hazard mapping into the development of urban and territorial plans. This would ensure that location-specific climate hazards are considered during land-use planning, infrastructure development, and emergency response. Overall, these adjustments will strengthen the Kyrgyz legal framework surrounding hazard mapping and adaptive urban planning, promoting proactive risk management and bolstering community resilience.

**Feedback from the participants of the workshop held on June 14th, 2024:** Feedback from paragraph 3.1.2 should be applied.

**Expanding the scope of environmental impact assessments (EIAs) to consider climate change (3.1.9).**

It is recommended that urban planning legislation be revised to explicitly include climate change considerations in environmental impact assessments. This entails the development of specific criteria and methodologies for assessing how urban development decisions could exacerbate climate vulnerabilities and risks. This will require the establishment of a comprehensive framework for monitoring and evaluating the long-term environmental impacts of urban projects, ensuring that ongoing developments align with sustainable practices. A forward-thinking approach of this nature will not only safeguard the environment, but also enhance the overall sustainability and livability of urban spaces for current and future generations.

**Feedback from the participants of the workshop held on June 14th, 2024:** Feedback from paragraph 2.1.5 should be applied.

**Establishment of mechanisms to identify and prioritize adaptation options (3.2).**

The ongoing development of the National (Climate) Adaptation Plan provides an opportunity to enhance measures for climate adaptation in urban management and development. The Plan should use climate risk assessments and climate hazards, exposure, and vulnerability mapping to identify and prioritize adaptation options to enhance resilience and mitigate the impact of climate change. Kyrgyz legislation addresses natural hazards almost exclusively as within the framework of disaster (“emergency”) management, without linking climatic risk and disaster response to urban planning mandates. Due to this – and the fact that there is not an established legal framework on climate change – the law should introduce provisions that oblige urban planning authorities to identify, assess and prioritize adaptation option. This should begin with the obligation to enumerate measures that address the identified climate vulnerabilities, ensuring a well-balanced mix of adaptation options. After defining these options, an assessment should be carried out considering factors such as the urgency of the climate risk, the feasibility of adaptation, the financial costs associated with the adaptation option, the ease of integration into existing institutional arrangements, and the impacts on other social, environmental, or economic

objectives. Thereafter adaptation options should be prioritized based on the assessment results in a manner that acknowledges the existence of various viable options and ranks them to identify the most effective ones that will be translated into concrete actions. To support the implementation of adaptation options, the law can establish measurable and verifiable benchmarks against which progress can be assessed to reveal the efficacy of actions undertaken and provide the basis for additions, adjustments, or the cessation of certain actions based on their effects.

Additionally, climate change adaptation needs to be approached in a coordinated manner that leverages cross-sectoral synergies and explores opportunities for achieving multiple benefits simultaneously. The inclusion of diverse stakeholders in the identification and prioritization of adaptation options may enable the identification of options that not only promote adaptation, but also support other goals, such as climate change mitigation, disaster risk reduction, and enhanced environmental management. Moreover, broadening the stakeholder pool can lead to the incorporation of traditional knowledge and practices from indigenous communities, an efficient and cost-effective means for adaptation that recognizes these groups' possession of unique local information on climatic and weather patterns and trends. The incorporation of such

mechanisms will entail changes in the legal framework for public participation in Kyrgyzstan.

As a final step in establishing mechanisms to identify and prioritize adaptation options, it is advised to link the legal framework for urban planning with that dealing with climatic hazards ("emergencies"). This can be done by establishing a legal requirement to assess the extent to which urban plans contribute to adaptation strategies. This will allow for the autonomous identification of gaps and opportunities to incorporate specific adaption measures into urban planning instruments.

As previously mentioned, despite the absence legislation enshrining the National Adaptation Plan, Kyrgyz legislation currently contains provisions that require the implementation of certain adaptation measures. At the time of this analysis, over half of these measures align with the Urban Law Module of the LCCTK.

**Feedback from the participants of the workshop held on June 14th, 2024:** Two participants from national and local authorities considered this recommendation applicable to the Kyrgyz context, while one participant found it inapplicable. Four participants indicated it was outside their area of expertise. Thus, the recommendation is seen as relevant by some authorities but lacks broader support, with many participants unable to assess its applicability due to a lack of expertise.

However, it is crucial for the law to also address the following topics:

**Establishment of public land buffers to prevent development in vulnerable and hazard-prone areas (3.3.2).** It is suggested that Kyrgyz urban legislation explicitly recognize and incorporate public land buffers into urban planning and land management instruments. Specifically, a legal amendment should establish the concept of "land buffers" and emphasize their role as a protective spatial barrier against potential risks associated with development near environmentally sensitive or high-risk areas. This adaptation measure would enhance the effectiveness of urban planning instruments in safeguarding ecosystems, promoting resilience against natural threats, and ensuring the sustainable use of land resources.

**Feedback from the participants of the workshop held on June 14th, 2024:**

One participant from the national authorities mentioned that this has been enshrined in Kyrgyz legislation, while two other participants considered the recommendation either partially applicable or inapplicable. Four participants regarded it as outside their area of expertise. Thus, the recommendation is acknowledged as already being part of Kyrgyz legislation by one national authority, but its relevance is questioned by others. A significant number of participants lack the expertise to assess its applicability.

**Enhancing resilience through unified essential (industrial) infrastructure placement regulations (3.3.6).**

Expanding upon the principles delineated in the Code of Regulations for the planning and development of rural settlements (2016) to encompass urban governance in the relevant legislation dealing with urban is recommended. This entails explicitly prohibiting the construction of essential infrastructure in areas prone to landslides, mudflows, snow avalanches, and those directly adjacent to seismic faults. Such a measure would ensure consistency and effectiveness in mitigating risks across all development projects and geographic settings.

**Feedback from the participants of the workshop held on June 14th, 2024:**

Three participants from both national and local authorities considered this recommendation relevant to Kyrgyz legislation, while two other participants found it partially applicable. One participant regarded it as outside their area of expertise, and another mentioned that placing such infrastructure in these zones is already prohibited by the building code SN KR 20-02:2024 "Earthquake-Resistant Construction. Design Standards" and the 2022 Regulations on Water Protection Zones and Strips of Water Bodies in the Kyrgyz Republic. Thus, the recommendation is seen as relevant and already aligned with existing Kyrgyz legislation by several authorities, though some participants see it as only partially applicable. Additionally, one participant highlighted that current regulations already address the concern, indicating a level of existing compliance with the recommendation.

**Enhance the responsiveness of Kyrgyz legislation to climate hazards through the consideration of rainfalls, flooding, and densification in the planning of critical infrastructure (3.3.7).**

It is recommended to explicitly include provisions that mandate the consideration of predicted rainfalls, flooding and densification in the planning of critical infrastructure such as sewerage systems,

storm drains, and wastewater treatment plants. The legal framework should establish clear obligations for developers to systematically address these climate-related factors during the development of urban planning instruments. This amendment would help ensure that water infrastructure is capable of withstanding the impacts of heavy precipitation, reducing the risk of economic damage, environmental contamination, and potential health hazards. Additionally, incorporating such requirements into the legislation aligns with international best practices for climate-resilient urban planning.

**Legal mandate for nature-based stormwater management (3.3.8).**

It is strongly recommended that Kyrgyz legislation be amended to include a legal mandate for nature-based stormwater management, particularly in areas with existing development or planned expansion. The absence of a storm sewer system in Kyrgyz cities, coupled with the adverse environmental impacts of the sewage systems currently in place, underscores the urgent need for regulatory measures. The introduction of legal provisions mandating the establishment of nature-based stormwater management systems would provide a sustainable alternative by redirecting the discharge of flash floods and snowmelt runoff from inappropriate networks.

### **Expansion of land information system functionality (3.3.9).**

To enhance climate resilience and improve land use planning, it is recommended to amend Kyrgyz legislation by explicitly incorporating provisions for including spatial data on climate vulnerabilities in the land information system. This amendment should require the identification and recordation of climate-related risks (natural hazards) associated with land parcels.

### **Integration of evacuation routes into Kyrgyzstan's urban planning framework (3.3.10).**

It is recommended to establish a requirement for urban plans to incorporate detailed evacuation routes and designate safe locations for temporary or long-term settlements, with particular attention given to communities in high-risk areas prone to climate-related hazards. This amendment aims to bridge the existing gap between urban planning and emergency management law, fostering a more coordinated and resilient approach to safeguarding communities in the face of extreme climatic events.

### **Feedback from the participants of the workshop held on June 14th, 2024:**

Two participants from national and local authorities stated that this recommendation is applicable to the Kyrgyz context, while one representative from local authorities considered it inapplicable. Four participants viewed this topic as outside their area of expertise. Thus, the recommendation is seen as applicable by some authorities but faces opposition from others. Additionally, a significant number of participants lack the expertise to provide a definitive assessment.

### **Regularization of informal settlements and upgrading of slums (3.4, 3.6.2).**

Informal settlements should be integrated into the planned urban landscape in Kyrgyzstan through the introduction of legal provisions for the regularization and, where necessary, upgrading of these areas. This involves implementing holistic approaches that recognize the reality of informality and seek to increase the resilience of informal settlement residents and slum dwellers, such as land titling, land subdivision, land consolidation, land pooling/readjustment, land sharing, community land trusts, land banks, and transfer of development rights. Moreover, regulatory frameworks must align with local realities to effectively adapt these areas to

climate change through slum upgrading. Flexible standards that uphold minimum health and safety requirements should be introduced initially. Further, there is a need for legislative reform to ensure that these communities have access to basic services such as water, sanitation, and energy.

All such interventions should be done with a view to ensuring that the regularized and/or upgraded settlements are affordable for the pre-existing residents. This can be achieved by, for example, building affordable housing, establishing community-saving schemes, providing subsidies to help residents cover the costs of upgrading, imposing a rent ceiling or temporarily limiting the right to sell to outside parties. Finally, meaningful community participation should be incorporated throughout the regularization and/or slum upgrading process. Securing the support and collaboration of informal settlement residents is crucial for the success of interventions, as it enables the integration of specific community needs into plans and promotes community buy-in. Participation should encompass not only land and buildings owners, but also residents with diverse tenure types (such as tenants), giving special attention to women, youth, disabled individuals, and the elderly, among other marginalized groups.



### **Enhancement of the relocation process in case of emergencies (3.5).**

While Kyrgyz legislation does acknowledge the need for proactive evacuations and relocations to safe sites during emergencies, it still lacks some crucial elements. Firstly, there is a necessity to legitimize the compensation process for the relocation, as, if not addressed, it will entail economic and social challenges for the affected individuals. Legal guidelines should explicitly define the criteria and mechanisms for offering financial compensation to those forced to relocate. Without this, community members might continue receiving compensation for relocation but opt to stay in hazardous zones.<sup>105</sup> Secondly, it is imperative that the law require authorities to consult both resettled and host communities on key aspects of relocation decisions, including site selection, timing, and relocation modalities, ensuring the engagement of all stakeholders. This participatory approach is crucial for fostering transparency and accountability in the relocation process, promoting the well-being of communities affected by emergencies and mitigating the risk of conflict between resettled communities and host communities. Thirdly, the law should require relocation site facilities to be equipped with appropriate land and housing, essential public services such as water, sanitation, electricity, and transportation, as well as access to social services

like education and healthcare. Additionally, there should be provisions ensuring that resettlement sites provide access to sources of income, livelihood, and employment opportunities. This comprehensive approach ensures that when short-term relocation must extend to medium-to-long-term resettlement, communities have the necessary infrastructure and support for a sustainable and secure future.

#### **Feedback from the participants of the workshop held on June 14th, 2024:**

Four participants from national and local authorities stated that this recommendation should be integrated into Kyrgyz legislation and that such provisions should be enforced by both local authorities and relevant branches of the ministries. One participant from local authorities considered the recommendation inapplicable, while two participants regarded the topic as outside their area of expertise. Thus, there is strong support for integrating the recommendation into Kyrgyz legislation from most participants, emphasizing the need for enforcement by relevant authorities. However, there is some disagreement and a lack of expertise among others regarding its applicability.

### **The introduction of substantive and procedural safeguards for eviction procedures (3.6.4).**

The legal framework in Kyrgyzstan outlines the grounds for eviction, including improper land plot use, acquisition for state and public needs, and prolonged non-utilization of land. However, the law needs to incorporate several specific procedural and substantive safeguards to protect against forced evictions. Most striking is the absence of provisions for the consultation of affected parties in eviction proceedings. In 2022, the Kyrgyz government initiated a process for establishing a new procedure for the seizure of land plots,<sup>106</sup> however, as of January 2024, there have been no updates on the new procedure. Thus, it is highly recommended to resume this reform process and introduce safeguards for evictees such as providing them alternative accommodation and granting them priority in demolishing and salvaging their property. These safeguards are especially important for vulnerable groups such as women, girls, children, disabled people, refugees, migrants, and the poor. Moreover, the law may need to introduce specific measures to ensure effective protection for these vulnerable groups.

<sup>105</sup> based on the interview conducted on October 30, 2023, in Naryn, Kyrgyzstan.

<sup>106</sup> D. Podolskaya. (2022, April 15). The Ministry of Agriculture proposes a new procedure for the seizure of land plots. 24.kg. [https://24.kg/obschestvo/230866\\_minishezh\\_predlagaet\\_novyyi\\_poryadok\\_izvyatiya\\_zemelnih\\_uchastkov/](https://24.kg/obschestvo/230866_minishezh_predlagaet_novyyi_poryadok_izvyatiya_zemelnih_uchastkov/)

### **Introduce specialized land and property dispute tribunals (3.6.6).**

Efficient resolution of land-related disputes is vital for upholding legitimate tenure rights and ensuring institutional accountability. Presently, in Kyrgyzstan, such disputes are typically settled by the authorized state body that granted the land plot, with legal proceedings in administrative courts in case of disagreements. While the integration of land dispute resolution within the broader administrative court system underscores a commitment to a comprehensive approach, it is recommended to establish a specialized and dedicated Land and Property Dispute Tribunal that will have sound expertise in handling disputes related to land rights. This would provide an avenue for a more nuanced understanding of the intricacies of land laws and property rights and cultivate greater expertise among judges in addressing land-related matters. By operating within the existing administrative court system, the tribunal will offer a clear and designated path for resolving land-related disputes, contributing to a streamlined and efficient mechanism. This legislative amendment is designed to fortify the legal landscape in Kyrgyzstan, ensuring justice, fairness, and specialized attention to land and property disputes.

### **Integration of climate change considerations into the development approval process (3.7.1).**

While current legal provisions on developmental approval in Kyrgyzstan address climate-specific criteria to a certain extent, there is still room to enhance their consideration in the development approval process. It is recommended that specific provisions that address climate adaptation strategies and priorities be introduced. This could involve amending existing laws to include criteria that explicitly require developers to demonstrate how their projects align with climate considerations, ensuring suitability for construction in the face of potential climate hazards. Additionally, establishing a comprehensive climate change legal framework would provide a basis for integrating risk and vulnerability assessments into the urban planning process, promoting sustainable and climate-resilient development practices. By incorporating climate-related criteria into the issuance of development permits, Kyrgyzstan can better prepare its urban areas for the challenges posed by climate change and contribute to long-term resilience.

### **Enhancement of compliance monitoring and enforcement for development control (3.7.4, 4.5.4).**

In light of the absence of an enforcement mechanism for development control in Kyrgyzstan, it is recommended that the legislation be amended to introduce robust compliance mechanisms to enforce compliance

with development permissions. Specifically, the inclusion of an “enforcement notice” provision would empower authorities to take necessary actions when developments deviate from approved plans and conditions. This could involve granting authorities the ability to issue notices to developers, compelling them to comply with specified conditions. Furthermore, the law should enable authorities to take direct actions to ensure compliance, such as entering sites and issuing enforcement orders for the removal of equipment, machinery, etc.. Strengthening enforcement measures is essential to prevent the abandonment of unfinished constructions, particularly in the context of climate change, as incomplete structures may pose increased risks to the environment and public safety in the face of changing weather patterns. The introduction of stringent enforcement mechanisms will not only enhance urban planning and development but also contribute to effective climate adaptation and resilience strategies in Kyrgyzstan.

### **Naryn Town: Recommendations on Urban Planning and Design for Adaptation**

The recommendations under Chapter 3 are closely aligned with Naryn's specific climate change adaptation needs. Establishing an umbrella climate change framework through the National (Climate) Adaptation Plan will facilitate the integration of the following adaptation measures in Naryn town.

Firstly, the city's vulnerability to natural hazards requires a localized approach to climate risk and vulnerability assessments. After national legislation mandates climate risk and vulnerability assessments at the local level, a more targeted and effective response to climate-related challenges can be developed based on assessment results, enhancing Naryn's resilience to disasters. For example, detailed provisions on risk and vulnerability assessments consisting of risk mapping, scenario planning, and community surveys can comprehensively evaluate potential risks associated with urban development and should be integrated into Naryn's urban planning framework. Moreover, legal provisions should be introduced to mandate the creation, publication, and periodic review of climate hazard maps at the local level. These maps will provide critical insights into local climate risks, guiding decision-

making processes related to land use planning, infrastructure development, and emergency response strategies. At the same time, to ensure inclusivity and accuracy in vulnerability assessments, Kyrgyz legislation should mandate community participation, including marginalized groups and communities with traditional environmental knowledge. By involving diverse stakeholders in the assessment process, Naryn can develop more tailored and effective resilience-building strategies. These processes, paired with the provisions for assessing greenhouse gas emissions of urban plans as recommended in Chapter 2, will strengthen linkages between urban planning and emergency frameworks and enhance coordination and effectiveness in addressing climate-related risks at the local level in Naryn town.

Secondly, Naryn, being susceptible to the effects of climate change, will benefit if the legal provisions prioritize the security of tenure and procedural safeguards for communities affected by forced relocations during emergencies. This includes ensuring adequate compensation, meaningful consultation with affected communities, and provision of essential services and infrastructure at relocation sites.

# Chapter 4 : Urban Planning and Design for Mitigation





## 4. Chapter 4: Urban Planning and Design for Mitigation

Being responsible for just 0.03 percent of global greenhouse gas emissions, the Kyrgyz Republic contributes little to climate change and yet is one of the Central Asian countries most susceptible to the impacts of climate change.<sup>107</sup> The consequences of increasing global temperatures are already apparent in rapid melting of thousands of glaciers and strained water supply for the country's critical agricultural sector.<sup>108</sup> Rising temperatures and reduced precipitation are likely to increase the frequency and severity of floods and droughts. Meanwhile, increases in average temperature are most pronounced at higher altitudes, affecting glaciers, snow, and ice, posing a threat to communities living in or near high elevation zones. Receding glaciers, changes in seasonal precipitation patterns, and glacial melt contribute to greater uncertainty in water distribution regimes and may endanger electricity generation, domestic water supply, agricultural activities, and infrastructure.

This section analyzes existing climate change mitigation measures in Kyrgyz legislation related to urban and territorial development

and planning processes. This includes issues such as greenhouse gas emissions, low-carbon urban form, green spaces for climate services, neighborhood planning and energy-efficient buildings, and climate change mitigation in development approvals. The aim is to assess the alignment of current legal frameworks with the need for sustainable and low-carbon urban development in the Kyrgyz Republic.

### 4.1. Urban Plans and Greenhouse Gas Emissions

#### 4.1.1. Emissions from Existing Urban Form

Before a city begins developing new urban plans, it is essential that planning authorities and other stakeholders have a thorough understanding of the city's carbon footprint through an assessment of the greenhouse gas (GHG) emissions attributable to urban form—i.e., the patterns and spatial arrangements of land use, transportation systems, and urban design elements, including the physical scope of the city, the layout of streets and buildings, as well as the internal configuration of settlements. This assessment serves as the starting point for climate change mitigation the planning process.<sup>109</sup>

In Kyrgyzstan, the sole document that establishes a connection between construction and GHG emissions is the Law “On Government Regulation and Policy in the Field of Emissions and Absorption of Greenhouse Gases” (2007). This law specifies that, during the design, placement, construction, reconstruction, and operation of facilities for economic and other activities, as well as in the construction of urban and other settlements, the utilization of advanced equipment and technologies must be ensured. This is underpinned by the premise that modern technology should lead to a reduction in both direct and indirect GHG emissions compared to previously employed analog methods.<sup>110</sup>

However, there is no requirement to assess greenhouse gas emissions during the development of urban planning documents, leading to a notable gap in incorporating comprehensive GHG assessments in the urban planning process. This gap raises concerns about the integration of climate considerations and emissions reduction strategies at the early stages of urban development planning, potentially hindering the effective incorporation of climate-friendly practices and mitigation measures in Kyrgyzstan's urbanization processes.

107. Najibullah, F. (2023, December 20). Melting glaciers and shallow rivers. Consequences of climate change in Kyrgyzstan. <https://rus.azattyq.org/a/32735229.html>

108. Asian Development Bank. Country Partnership Strategy: Kyrgyz Republic, 2013-2017. <https://www.adb.org/sites/default/files/linked-documents/cps-kgz-2013-2017-oth-02-ru.pdf>

109. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

110. Law “On Government Regulation and Policy in the Field of Emissions and Absorption of Greenhouse Gases.” (2007). <https://cbd.minjust.gov.kg/202104?refId=725202>

### 4.1.2.Existing Carbon Sinks

In addition to evaluating the current urban form, it is beneficial to understand the scope of existing carbon sinks in urban areas, such as forests and water bodies. Legal provisions may specify, for example, that development plans should include descriptions of the natural environment and all local conditions in the planning area at the commencement of the planning period. In Kyrgyzstan, the zoning category, “recreational areas” approximates the scope of carbon sinks in the urban sphere, as it includes urban forests, forest parks, forest protection zones, reservoirs, agricultural lands, and other lands, along with parks, gardens, squares, and boulevards<sup>111</sup>. However, there are no detailed specifications for the natural environment and relevant local conditions in the planning area. Thus, while the law incorporates information about existing carbon sinks, or “recreation areas”, into urban planning instruments, the lack of detailed specifications for describing the natural environment and local conditions poses a challenge to planning for climate change mitigation.

### 4.1.3.Planning Scenarios and Emission Levels

The goal of climate change mitigation in urban

planning should be to decrease greenhouse gas emissions by choosing the most environmentally friendly planning scenario in terms of energy requirements, energy consumption, energy solutions, transport requirements, and an estimation of the type and volume of emissions that will be produced by resulting construction and operations. This selection is only feasible after evaluating various planning scenarios and assessing their respective levels of GHG emissions. However, there is no requirement in the Kyrgyz urban planning process to conduct such an evaluation, leading to a significant gap in promoting emission-conscious decision-making. To address this, the law should incorporate mandatory GHG emissions assessments in urban planning processes. This addition would align with the broader objective of reducing environmental impact and foster a more sustainable and responsible approach to urban development in Kyrgyzstan.

### 4.1.4.Planning Scenarios and Carbon Sinks

In line with section 4.1.3, it is imperative that planning scenarios also include an assessment of their impact on carbon sinks. This evaluation ensures the selection of the least environmentally

destructive option, or preferably one that improves the quality and quantity of carbon sinks. The documentation should elaborate the plan’s considerations regarding design, technology, location, scope, and scale, accompanied by a thorough study of relevant and viable alternatives. However, the existing legislation in Kyrgyzstan fails to require the drafting of planning scenarios, resulting in a significant gap concerning the integration of carbon sink assessments in urban planning processes.

### 4.1.5.Urban Plan and Climate Change Strategies and Targets

In addition to aligning with environmentally friendly planning scenarios, urban plans should aim to achieve “win-win” outcomes. This involves directing urban development to reduce greenhouse gas emissions and energy consumption while significantly contributing to the climate change strategies, targets, and measures set by local, sub-regional, and national governments. This means anchoring such mitigation commitments under the Paris Agreement as the reduction of GHG emissions from buildings, electricity generation, transport, and waste in urban plans. While the Presidential Order “On measures to ensure environmental safety and climate

111

SN KR 30-02:2020 “Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation”. (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>

sustainability” (2021)<sup>112</sup> offers recommendations to the government in the policy realm, these guidelines have not been integrated into the Kyrgyz legal framework. With a view to mitigating the adverse effects of air pollution on public health, the order specifically states that it is necessary to reassess the standards and criteria governing the design, placement and construction of high-rise buildings to ensure adequate air circulation in densely populated areas, considering both the potential for urban development and the long-term wind patterns. Additionally, the document underscores the importance of extensively adopting the “waste to income” principle<sup>113</sup> to enhance waste management efficiency through the introduction of modern waste management mechanisms, such as differentiated waste collection, recycling, low-waste technologies, and the principle of extended producer responsibility. However, these measures remain confined to the policy level without proper incorporation into the legal framework, limiting the implementation of sustainable urban development practices in Kyrgyzstan.

#### **4.1.6. Urban Plan Emission Reduction Targets**

This subsection centers on ascertaining whether

urban plans have defined objectives for curtailing greenhouse gas emissions as well as measurable and verifiable benchmarks to facilitate progress assessments. However, given the weak connection between GHG measurement and urban planning in Kyrgyzstan, there is currently no legal obligation for urban plans to establish specific emission reduction targets or nor do any other policy instruments in Kyrgyzstan establish targets to reduce GHG emissions linked to urban planning.

#### **4.1.7. Urban Plan Greenhouse Gas Emissions Impact Assessment**

This subsection focuses on evaluating the actual implementation of the urban plan itself, rather than analyzing various planning scenarios, to gauge its impact on greenhouse gas emissions and carbon sinks. Such insights can be acquired through Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA). As outlined in subsection 2.1.5, there is a requirement to appraise different types of urban planning documentation in Kyrgyzstan.

This assessment covers various environmental aspects, such as existing pollution levels, land use restrictions (including protected natural

areas and heritage sites), natural resource potential, environmental management, and socio-economic conditions, including public health. Hence, Kyrgyz legislation has made significant strides in implementing Environmental Impact Assessments (EIAs) to inform urban planning decisions. However, it is noteworthy that there is no explicit mention of assessing the greenhouse gas emissions associated with the proposed planning instrument in the current legal framework. This represents a gap that could be addressed by incorporating specific provisions to ensure a comprehensive evaluation of GHG emissions in the assessment process.

#### **4.2. Urban Form and Reduction of Greenhouse Gas Emissions**

##### **4.2.1. Connectivity and Minimum Standards for Streets**

A crucial strategy for lowering greenhouse gas emissions in urban environments involves replacing high-emission vehicular use with more environmentally friendly mobility options like walking and cycling. For this approach to be effective, streets should be designed to encourage connectivity and walkability through the arrangement of smaller blocks that allow

112. Order of the President “On measures to ensure environmental safety and climate sustainability”. (2021). <https://cbd.minjust.gov.kg/430478?refId=1088134>

113. The “waste to income principle” means improving waste management efficiency through the introduction of modern waste management mechanisms (recycling, low-waste technologies, the principle of extended producer responsibility), harmonization with the Eurasian Economic Union standards and international requirements. Retrieved from the Order of the Cabinet of Ministers of Kyrgyzstan No. 201-r, dated September 24, 2021: <https://cbd.minjust.gov.kg/218675/edition/1094971/ru>

frequent changes in direction. From international best practice, the suggested average block size typically falls within the range of 1 to 3 hectares.<sup>114</sup> However, in Kyrgyz legislation, the structural organization of a residential area is defined only at the following two levels: a micro district (quarter) with an area ranging from 40 to 80 hectares and a residential district with an area of 80 to 250 hectares. Consequently, the “block” concept is not explicitly recognized in Kyrgyz urban planning law, which represents a significant gap in the legal framework.

#### 4.2.2.Connectivity and Street Design Standards

Streets should be designed to be walkable, meaning they are easily traversable, compact, visually appealing, and safe. Walkability refers to environments that facilitate activities such as walking, jogging, running, biking, in-line skating, and other non-motorized forms of travel. The concept of “walkability” considers several factors, including distance (a radius easily covered by walking or cycling), design (the appeal, convenience, safety, and security of the place, including roads and sidewalks), and land-use mix (a diverse range of land uses within the transport

radius, such as retail, recreational, educational, and residential areas, providing residents with numerous destinations and gathering spaces).<sup>115</sup> Kyrgyz building code SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”<sup>116</sup> specifies the width of pedestrian areas based on street categories, ranging from 0.75 to 4.5 meters. It also outlines two types of bicycle paths (separate and isolated) with widths varying from 1 to 1.5 meters, elevated 15 cm above passage levels (like pavements). Furthermore, the law addresses the potential placement of kiosks, benches, and small architectural elements on pedestrian areas and paths. Meanwhile, the specific parameters for the illumination of streets, roads, and squares are defined in the building code SN KR 23-05:2019 “Natural and Artificial Lighting”.<sup>117</sup>

Through these pieces of legislation, urban planning in Kyrgyzstan effectively incorporates specific walkability criteria that promote pedestrian-friendly cities, sustainable practices and increased urban connectivity. This commitment is also reflected in the prescribed dimensions for pedestrian areas, bicycle paths, and in the regulations governing the placement of lighting amenities. The legislation’s emphasis on walkability underscores a broader

vision for urban development that prioritizes w

#### 4.2.3.Connectivity and Plot Design Rules for a Walkable Streetscape

Linked to street design standards are plot design regulations. Neighborhoods that prioritize pedestrians and cyclists should predominantly design according to the human scale, rather than the vehicular scale. Plot design rules fostering walkability may involve, for example, reducing building setbacks from streets, setting standards for private fencing, implementing plot coverage rules encouraging buildings to engage with streets, and limiting street-facing parking. Kyrgyz technical document<sup>118</sup> states that residential buildings should be situated at distances varying from three to six meters, contingent on the street category. However, there is no stipulation mandating the reduction of these setbacks. Regarding parking plots, the same document specifies their distances (ranging from 10 to 50 meters) and the number of parking spaces (varying from 10 to 300) based on the type of facility (e.g., residential building, educational or medical institution, public outdoor sports facilities). Once again, there is no requirement to impose limitations on parking spaces in terms of size or quantity. In aiyl aimaks,

114. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

115. Ibid

116. SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

117. SN KR 23-05:2019 “Natural and artificial lighting”. (2019). <https://cbd.minjust.gov.kg/200320?refid=1048712>

118. SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>



private fencing should not exceed two meters, with its type and design determined based on design proposals in agreement with the territorial body of architecture. This consideration includes aesthetic requirements such as compositional and artistic principles, design specifications, color schemes, and the need to align the structure's appearance with its purpose. As for plot coverage, Kyrgyz legislation currently lacks defined standards. Therefore, Kyrgyz technical standards partially consider the human scale in design, though there is potential for further enhancement

#### 4.2.4. Accessibility and Mixed Land Use

Reducing greenhouse gas emissions in urban areas can be accomplished by improving accessibility and fostering mixed land uses. Increased accessibility to jobs, housing, and recreational areas minimizes the reliance on vehicular transport, shortens travel times, and encourages the adoption of alternative, environmentally-friendly modes of transport such as walking and cycling. In Kyrgyzstan, building code SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type"<sup>119</sup> establishes that a neighborhood quarter or section of a neighborhood quarter can consist of

"mixed residential development," which is an area comprising residential spaces, mixed residential development, and public spaces.

These public areas encompass green spaces like squares and boulevards, everyday and periodic-use facilities, daycare centers, parking garages, driveways, parking lots, etc though, without mentioning such spaces as, for example, retail, restaurants, and grocery stores. Thus, Kyrgyz legislation promotes mixed land use, though they are not fully aligned with contemporary urban planning principles to create accessible and vibrant urban environments.

#### 4.2.5. Urban Density

Urban density influences GHG emissions in two ways. First, low densities increase the average travel distances for both work and shopping trips, which leads to higher emissions due to the use of vehicular transport. Second, low densities make it difficult to switch to less energy-intensive and alternative modes of transport, such as public transport, walking, and cycling, because the transit demand is too dispersed and too low.<sup>120</sup> In Kyrgyzstan, urban planning instruments establish three distinct categories, each with specific standards based on city population. For instance,

a city with a population of up to 20,000 people is designated as high density with a standard of 130 people per hectare, while a city exceeding a million inhabitants is categorized as having a standard density of 220 people per hectare.<sup>121</sup> In the course of reconstructing existing developments, any permissible increase in calculated population density is capped at a maximum of 25-30%. Thus, Kyrgyz legislation provides a structured approach to managing urban density, though without explicitly considering the environmental impact and potential reduction in GHG emissions associated with increased urban density.

#### 4.2.6. Optimal Densities

Transport infrastructure plays a pivotal role in determining the location and nature of urban development. The absence of coordination between density, land use, and transportation has led to urban sprawl and heightened reliance on automobiles, resulting in increased congestion, elevated air pollution, and greater emissions. Urban planning instruments should aim to evaluate how urban areas can effectively capitalize on the correlation between densities and infrastructure planning to foster "transit-oriented development". Kyrgyz building code broadly stipulates that the planning structure of cities and settlements

119. SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

120. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

121. Annex "T" of SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

should be established, ensuring the compact placement and interconnection of functional zones, rational zoning of the territory in coordination with the system of public centers, and engineering-transport infrastructure.<sup>122</sup> In this way, Kyrgyz legislation emphasizes a comprehensive approach to urban planning, considering connectivity, sustainability, and efficient land use.

### 4.3. Green Spaces for Environmental and Climate Services

#### 4.3.1. Standards for Green Public Spaces

Legal frameworks for planning and land-use can promote the creation of urban green spaces in several ways, such as by integrating urban green space infrastructure needs in urban plans, by considering green spaces within infrastructural projects and urban rehabilitation approaches, and by establishing regional planning frameworks, such as green corridors and networks. Legal provisions can also establish minimum quantitative standards for green spaces, such as a prescribed level of open space per 1,000 people and allocating

a percentage of land for public green space in areas to be developed. The World Health Organization (WHO) recommends at least 9m<sup>2</sup> of urban green space per person.<sup>123</sup> Kyrgyz legislation stipulates that the level of green open spaces within the built-up urban area must be at least 40%.<sup>124</sup> Moreover, based on the size of the city, the law determines the precise amount of green space allocated per person at both city-wide and residential scales (see Table 5).

Green open spaces	Level of green open spaces, m <sup>2</sup> /person		
	big and large cities	medium-sized cities	small towns and settlements
City-wide	10	7	8-10
Residential areas	6	6	

**Table 5.** Level of green open spaces in the city-wide and residential areas under SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”

Based on the above, Kyrgyz law clearly adheres to the WHO-recommended standard of urban green space per person, with certain variations based on the city’s size. By allowing for such variations in green space standards, Kyrgyz

legislation acknowledges the diverse needs and contexts of urban environments. This adaptive framework promotes a balance between overarching public health recommendations and localized development considerations.

#### 4.3.2. Distribution of Green Spaces

In addition to being an essential component of climate change mitigation,

the distribution of green spaces across the city holds added advantages, mainly by improving physical and mental health and urban livability and enhancing resilience to environmental risks.<sup>125</sup> Kyrgyz legislation emphasizes the importance of a continuous system of green areas and other open spaces in the development

122. Paragraph 4.7 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>  
 123. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)  
 124. Paragraph 7.1 of SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”. (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>  
 125. ibid

of urban planning documentation for cities and settlements.<sup>126</sup> However, it refrains from mandating equal the balanced distribution of green spaces across the urban area, a decision influenced by the diverse geographical and demographic characteristics of urban areas in Kyrgyzstan. This approach recognizes the need for flexibility, allowing urban planners to tailor green space distribution to each locality's unique features and requirements, promoting a more effective and context-sensitive urban development.

#### 4.3.3. Green and Blue Infrastructure

Integrating green spaces and blue infrastructure, such as lakes, rivers, canals, ponds, wetlands, floodplains, and water treatment facilities, into urban areas brings a range of ecological and social benefits. This integrated infrastructure is vital for mitigating climate change by acting as a carbon sink and providing valuable ecosystem services. These services include improving air and water quality, regulating floods and temperatures, and reducing noise levels. Examples include sustainable urban drainage solutions, such as swales,<sup>127</sup> water gardens, and green roofs.

In Kyrgyzstan, there is a legal obligation to preserve

areas with existing plants and water bodies to the maximum extent possible when placing parks and gardens.<sup>128</sup> Nonetheless, the law still lacks comprehensive strategies to fully harness the potential of green and blue infrastructure. Strengthening these efforts could further optimize the integration of sustainable urban drainage solutions and enhance the overall effectiveness of green and blue infrastructure initiatives.

### 4.4. Neighborhood Design and Energy Saving in Buildings

#### 4.4.1. Urban Form and Energy Saving in Buildings

Neighborhood design can be leveraged for buildings with limited emissions and energy use by taking advantage of natural conditions to reduce dependencies on electricity grids and natural gas. Adequate orientation and layout of streets in each geographical location can minimize the trapping of solar radiation and favor wind access (ventilation). However, Kyrgyz legislation currently focuses solely on the obligation to consider buildings' orientation,<sup>129</sup> and it does not address the importance of street design in optimizing energy efficiency.

#### 4.4.2. Thermal Properties of Urban Surfaces

The thermal characteristics of urban surfaces play a crucial role in impacting the energy usage and comfort levels of buildings. For example, increasing the albedo (a surface's ability to reflect solar radiation) can significantly lower daytime high surface temperatures during summer. To enhance thermal comfort at the pedestrian level and reduce energy consumption in buildings, one can minimize paved surface areas, select appropriate colors, and utilize permeable and porous paving materials. However, the Kyrgyz building code<sup>130</sup> only specifies that surface areas within the landscape and recreational territories should be surfaced using tiles, gravel, and other durable mineral materials. Asphalt covering is allowed only in exceptional cases. Consequently, depending on their color, material, and reflective properties, tiles and gravel have the potential to minimize heat absorption, potentially lowering the need for cooling in warmer climates. Additionally, improved water drainage from these materials could assist in effective stormwater management. Asphalt, on the other hand, while being durable, tends to absorb and retain heat, contributing to the urban heat island effect. In certain contexts, this

126. *ibid*

127. A swale is a shallow, usually vegetated, depression or channel designed to manage water runoff and promote infiltration into the soil.

128. SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

129. paragraph 12.19 of SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

130. paragraph 7.11(2) of SN KR 30-01:2020 "Planning and Building of Cities and Popular Points of City Type". (2020). <http://cbd.minjust.gov.kg/act/view/ru-ru/200523>

can increase the demand for cooling in buildings, potentially leading to higher energy consumption. Thus, explicitly aligning the Kyrgyz building code with principles emphasizing heat mitigation is needed.

#### **4.4.3. Plot Design and Energy Saving in Buildings**

Building orientation is a crucial aspect of reducing the energy consumption of buildings. It refers to the practice of placing a building to take advantage of natural conditions in order to regulate its indoor temperature and lighting exposure. The optimal orientation of the buildings depends on the local climate and geographical location and can be achieved when the building has good ventilation and exposure to sunlight.<sup>131</sup> The Kyrgyz Public Buildings and Facilities Building Code (2018)<sup>132</sup> states that for buildings located in areas with an average monthly temperature of 21°C and above in July, rooms with consistent human occupancy must safeguard light openings from excessive heat or sunlight.

This applies particularly to rooms where sunlight penetration or overheating is restricted due to technological and hygienic requirements, with light openings oriented within the range of 130-315°C. This aims to enhance energy efficiency by

addressing sunlight penetration and overheating concerns and encouraging architects and builders to strategically position buildings to maximize natural light exposure while minimizing the impact of excessive heat. Moreover, this requirement aligns with the broader principle that optimal building orientation, tailored to the local climate and geography, contributes significantly to energy conservation and sustainable building practices. The building code SN KR 31-09:2018 “Single-apartment residential buildings,”<sup>133</sup> broadly states that to attain optimal technical and economic features for the house and to decrease specific energy consumption for heating, the most rational orientation of the house and its rooms based on the cardinal points should be used. This should consider the predominant directions of cold winds and solar radiation fluxes.

#### **4.5. Implementation of Climate Mitigation Strategies through Development Approval/Control**

As it was defined in section 3.7, there is no established legal framework for climate change in Kyrgyzstan. Existing provisions are not incorporated in the urban planning framework; thus, there are no linkages for considering climate mitigation in the issuance of development permits.

However, certain criteria for climate change mitigation do exist under Kyrgyz legislation.

##### **4.5.1. Development Approval and Mitigation**

Subsection 3.7.1 defined four criteria that are considered during the issue of building permits in Kyrgyzstan, among which there is a general requirement “to comply with urban planning documentation.” Thus, those climate change mitigation actions defined in Chapter 4 of this document should be automatically adhered to.

##### **4.5.2. Developers’ Contribution for Mitigation Infrastructure**

As defined in subsection 3.7.2, Kyrgyz legislation does consider the developer’s contribution to the adaptation infrastructure through the need to improve the municipal area around a construction site. However, there is no obligation for developers to contribute to mitigation infrastructure, such as green spaces and the installation of energy-saving facilities.

131. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

132. Kyrgyz Public Buildings and Facilities building code. (2018). <http://cbd.minjust.gov.kg/act/view/ru-ru/200296>

133. SN KR 31-09:2018 “Single-apartment residential buildings”. (2018). <https://www.gov.kg/storage/media/npa/167/5f1eb67259c61.rar>



#### 4.5.3. Compliance Monitoring and Mitigation

An effective development control system should encompass mechanisms for monitoring compliance with approved developments and their conditions. This involves granting authorities the power to enter land or buildings for inspections or surveys with the aim of preparing plans or determining whether any unauthorized developments are taking place. However, in Kyrgyzstan, as outlined in subsection 3.7.3, there is only a post-approval process for controlling development permit compliance, impeding proactive monitoring and enforcement while new developments are being constructed.

#### 4.5.4. Compliance Enforcement and Mitigation

As defined in subsection 3.7.4, enforcement mechanisms that would make developers follow the development permit are absent from the Kyrgyz legal framework. Refer to the recommendations outlined in the previous chapter for strategies to address this gap and implement effective enforcement measures. These suggestions aim to enhance compliance with approved permits and foster a more regulated development process in Kyrgyzstan.

### Recommendations

#### **Inclusion of GHG assessment in the process of developing urban planning documents (4.1.1, 4.1.3).**

To address the current gap in Kyrgyz legislation and enhance climate change mitigation in urban development, the law should require a mandatory assessment of direct and indirect greenhouse gas emissions attributable to urban form during the development of urban planning documents. This would align with international best practices, ensuring that climate considerations and emissions reduction strategies able to be systematically incorporated at the early stages of urban planning. The proposed amendment could, for instance, provide a transparent mechanism for assessing emissions from the existing urban form by mandating an impact assessment of urban plans that includes GHG emissions. This assessment would include a description of current emission levels and an overview of how those levels are expected to change if the plan or initiative is implemented. Additionally, a requirement for forecasts detailing the potential environmental impacts of urban plans, such as changes in GHG emission levels, could be introduced. Adopting these approaches would guarantee a holistic strategy for climate change mitigation in Kyrgyzstan's urbanization processes. Moreover, the law should also incorporate a mandatory requirement for the

evaluation of different planning scenarios, including each scenario's GHG emissions levels, during the urban planning process. The amended legislation should emphasize the importance of selecting the least GHG-intensive planning scenario. This selection process should involve a comprehensive assessment of factors such as energy requirements, energy consumption, energy solutions, transport needs, and an estimation of emissions during both the construction and operation phases of development. By incorporating such a requirement into the urban planning framework, Kyrgyzstan can align with the broader objective of reducing emissions levels and promoting sustainable forms of development.

**Feedback from the participants of the workshop held on June 14th, 2024:** Two participants from the local authorities consider this recommendation relevant. However, one participant from the national authorities finds it not applicable, explaining that a general environmental assessment is already conducted during the development of urban planning documentation. Four participants indicated that this topic is outside their area of expertise. Thus, while there is local support for the recommendation, the national perspective suggests that it may be redundant due to existing environmental assessment practices. The lack of expertise among some participants further highlights the need for more targeted discussions and clarification on the recommendation's relevance and application.

**Expanding the scope of required information for assessing carbon sinks (4.1.2, 4.1.4).** Considering the importance of incorporating information about existing carbon sinks into urban planning for sustainable development, it is recommended that Kyrgyz legislation be amended to include specific and detailed specifications for describing the natural environment and local conditions in planning areas on the local level. By enhancing the legal framework<sup>134</sup> to explicitly mandate the inclusion of comprehensive information on

carbon sinks such as urban forests, forest parks, protection zones, reservoirs, agricultural lands, and other relevant spaces, the amendment would provide a more robust foundation for development plans. Relevant information could include assessments of biodiversity, land use and cover, topography and hydrology, soil quality, climate considerations, and emission absorption capacity. Moreover, it is recommended that Kyrgyz legislation be amended to require the assessment of carbon sinks along with carbon emissions (as noted in the recommendation above) in planning scenarios. Such a regulatory enhancement would align with international best practices for sustainable urban development and ensure that climate mitigation considerations, specifically those related to carbon sinks, are integral to decision-making in urban planning process in Kyrgyzstan.

**Feedback from the participants of the workshop held on June 14th, 2024:** Two participants from national and local authorities view this recommendation as applicable, while one local authority participant finds it inapplicable. Four participants consider the topic outside their area of expertise. Thus, although the recommendation is supported by some, further clarification and engagement may be needed to address differing opinions and expertise gaps.

**Inclusion of mitigation measures into the urban planning legal framework (4.1.5).** This legislative amendment would solidify directives for reducing greenhouse gas emissions and energy consumption through, for example, the reduction of emissions from buildings, electricity generation, transport, and waste, ensuring their implementation in urban development projects. Moreover, the legal framework should be updated to incorporate guidelines from the 2021 Order of the President "On measures to ensure environmental safety and climate sustainability", thereby bridging the current gap between climate policy recommendations and legislative implementation. This comprehensive approach is essential for fostering effective and sustainable urban development practices in Kyrgyzstan.

**Addressing the current deficiency in specifying**

<sup>134</sup>. Please note that because current Kyrgyz legislation does not address this specific topic, it is up to local experts to determine which existing law should cover it or whether a new legal document needs to be developed.

**objectives for reducing GHG emissions within urban plans (4.1.6).** Kyrgyz urban planning legislation should be revised to mandate that urban plans incorporate explicit targets for GHG emission reduction, along with measurable and verifiable benchmarks to enable thorough assessments of progress in terms of emissions reduction. This amendment is essential to provide a clear and comprehensive framework for integrating sustainability goals into urban planning practices in Kyrgyzstan. By establishing explicit targets and assessment criteria, the legal framework can significantly contribute to advancing GHG emissions reduction in the urban environment.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from national and local authorities find this recommendation applicable, while one local authority participant considers it inapplicable. Four participants indicate that the topic is outside their area of expertise. Thus, while there is some support for the recommendation, additional input and clarification may be necessary to address varying perspectives and expertise levels.

**Expanding the scope of EIAs to include GHG emissions (4.1.7).** Amending the current legal provisions on environmental impact assessments is recommended to explicitly mandate the assessment of GHG emissions in the process conducting EIAs of urban planning instruments. This amendment would ensure that EIAs of urban plans can be used to promote climate change mitigation, aligning with the broader objectives of environmental sustainability and sustainable urban development.

**Enshrining the “block” concept into the Kyrgyz urban legislation (4.2.1).** It is recommended to amend Kyrgyz legislation to enhance sustainable urban development practices and align with international best practices for GHG reduction. Specifically, the law should be revised to explicitly incorporate the concept of a “block” within the structural organization of residential areas. This adjustment would enable the small-scale planning of streets to be appropriately designed, promoting connectivity and supporting environmentally friendly mobility options such as walking and cycling. Furthermore, to align with international best practices, the suggested block size should range from one to three hectares. This comprehensive amendment will bridge the current gap in the legal framework, ensuring that urban design in Kyrgyzstan promotes low-carbon mobility and increases urban connectivity.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Three participants from national and local authorities find this recommendation applicable. However, two participants from the same groups argue that it is inapplicable, noting that block size regulations are already specified in the building code SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type.” Additionally, two participants consider the recommendation partially applicable, suggesting it may be more relevant to large cities rather than small towns. Thus, while there is some support for the recommendation, its relevance and applicability are seen as context-dependent.

**Enhancing urban design through the pedestrian-focused interventions (4.2.3).** While Kyrgyz urban legislation enshrines certain criteria that promote walkability in cities, there is room to further expand these criteria. In terms of setbacks, it is recommended to empower planning authorities to reduce setback requirements in order to create denser blocks that contribute to more accessible and people-centric neighborhoods. As for parking, it is recommended to enshrine a provision to limit the placement of street-facing parking to promote a safer and more aesthetically pleasing urban environment. Restricting street-facing parking

aligns with contemporary urban design principles that prioritize pedestrian safety, enhance the visual appeal of streetscapes, and contribute to a more vibrant and people-friendly atmosphere. This measure would address potential traffic hazards and contribute to a cohesive and well-designed urban landscape that encourages alternative, sustainable modes of transportation. Also, it is recommended to establish legal requirements for plot coverage, which currently lacks defined standards in Kyrgyz legislation. These provisions would specify acceptable limits for the percentage of land that can be covered by buildings, infrastructure, and other elements. This amendment aims to ensure that the utilization of land within residential areas is optimized to foster a harmonious blend of green spaces, built structures, and amenities, promoting overall livability and sustainability.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Six out of seven participants view this recommendation as relevant to Kyrgyz legislation. However, one participant from the local authorities considers it only partially applicable. Thus, the recommendation is broadly supported but acknowledged as having limited applicability in specific contexts.

#### **Mixed Land Use Definitions in the Urban Planning Legislation (4.2.4)**

While Kyrgyz legislation extensively covers the topic of mixed land use, it is recommended to broaden the definition of “mixed residential development” to explicitly include retail stores, restaurants, grocery stores, and other essential commercial and community spaces. This will ensure that neighborhood quarters integrate residential, commercial, and public areas effectively, fostering vibrant and self-sustaining environments.

#### **Integration of the urban drainage solutions into Kyrgyz legislation (4.3.3).**

Considering the myriad ecological and social benefits derived from integrating green spaces and blue infrastructure into the urban environment, it is recommended to establish urban drainage solutions like swales, water gardens, and green roofs in Kyrgyz legislation. Amending the law to incorporate such strategies would underscore the commitment to sustainable urban development in Kyrgyzstan. By formally integrating such urban drainage solutions, the country would align with contemporary best practices and fortify its ability to mitigate climate change and enhance ecosystem services.

#### **Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:**

Six out of seven participants regard this recommendation as relevant to Kyrgyz legislation. However, one participant from the local authorities finds it only partially applicable. Thus, the recommendation is widely supported, though there are some concerns about its full applicability in all contexts.

#### **Consideration of energy-efficient urban planning (4.4.1, 4.4.2).**

It is recommended that Kyrgyz legislation be amended to incorporate a comprehensive approach to energy-efficient urban planning. Firstly, the law needs to address the adequate orientation and layout of streets in local climate and geographical contexts to promote energy efficiency. Secondly, it is advisable to specify, within the existing regulations (paragraph 7.11(2) of the SN KR 30-01:2020 “Planning and Building of Cities and Popular Points of City Type”), the suitable colors, as well as permeable and porous paving materials. This step aims to minimize cooling requirements effectively. Simultaneously, limiting the use of asphalt, which is notorious for its heat-absorbing characteristics, can significantly combat the urban heat island effect and reduce unnecessary energy consumption in building cooling systems. These amendments would both enhance the



overall quality of urban living and reduce energy consumption in Kyrgyzstan.

**Complete integration of climate change mitigation measures into the Kyrgyz legislation and the development approval process**

**(4.5.1).** Building upon the recommendation provided for subsection 3.7.1, it is imperative to incorporate all climate change mitigation measures outlined in this chapter into Kyrgyz legislation for urban planning requirements. This integration ensures that these measures become automatic requirements during the building permit issuance process. This approach not only strengthens environmental considerations in urban development but also aligns the legislative framework with contemporary climate-smart practices, contributing to long-term resilience and mitigation efforts.

**Expanding the scope of developers' contribution to mitigation infrastructure (4.5.2).**

To avoid overwhelming public authorities, especially in contexts of limited public resources, part of the burden related to infrastructure and service provision may be shifted to the developers at the development approval stage. It is recommended that Kyrgyz legislation<sup>135</sup> explicitly mandate the inclusion of energy-efficient measures in construction projects, ensuring a holistic and environmentally conscious approach to urban

development. This may involve stipulating specific standards or incentives to encourage developers to integrate energy-saving technologies and practices into their projects.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from the local authorities consider this recommendation applicable, while one participant from the national authorities deems it inapplicable. Additionally, one local authority representative finds it partially applicable, suggesting it should be implemented only with the agreement of the customer or local authorities. Three participants indicated that this topic is outside their area of expertise. Thus, while there is some support for the recommendation, its implementation may require further clarification and agreement from relevant stakeholders.

**Proactive monitoring of the construction process by the inspectors (4.5.3).**

It is recommended to enhance Kyrgyz legislation by including provisions that authorize authorities to conduct inspections of constructions at various stages of development, from construction to post-approval maintenance, to ensure compliance with approved plans and regulations. A proactive approach of this nature will contribute to a more effective development control system, promote

better adherence to urban planning standards, as well as foster transparency and accountability in the construction industry. Additionally, it will enable timely identification and rectification of any deviations from approved plans, minimizing the risk of non-compliance and ensuring the overall quality and sustainability of urban development projects.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from the local authorities consider this recommendation applicable, while two others from the same group find it partially applicable. Additionally, three participants indicated that the recommendation is outside their area of expertise. Thus, while there is partial support from local authorities, further review may be needed to address the concerns and expertise gaps.

135. Please note that because current Kyrgyz legislation does not address this specific topic, it is up to local experts to determine which existing law should cover it or whether a new legal document needs to be developed.

## **Naryn Town: Recommendations on Urban Planning and Design for Mitigation**

The mitigation measures recommended in Chapter 4 closely relate to Naryn's context and complement the strategies discussed in the previous chapters. Integrating mandatory assessments of greenhouse gas (GHG) emissions into the urban planning process is particularly important. This ensures that climate-friendly practices are prioritized from the outset of development. By implementing such measures, including reducing emissions from buildings and transportation, Naryn can advance sustainable urban development and play a significant role in climate change mitigation efforts. Moreover, by establishing measurable benchmarks (targets) for GHG emission reduction, Naryn can track progress toward its sustainability goals.

To further advance climate change mitigation in Naryn, Kyrgyz legislation should be amended to incorporate assessments of carbon sinks (urban forests, protected zones, and other relevant spaces) to promote sustainability and environmental conservation. Also, to support sustainable urban development in Naryn, Kyrgyz legislation should explicitly incorporate the concept of "blocks", introduce pedestrian-focused interventions and urban drainage solutions, and overall consider energy-efficient urban planning.

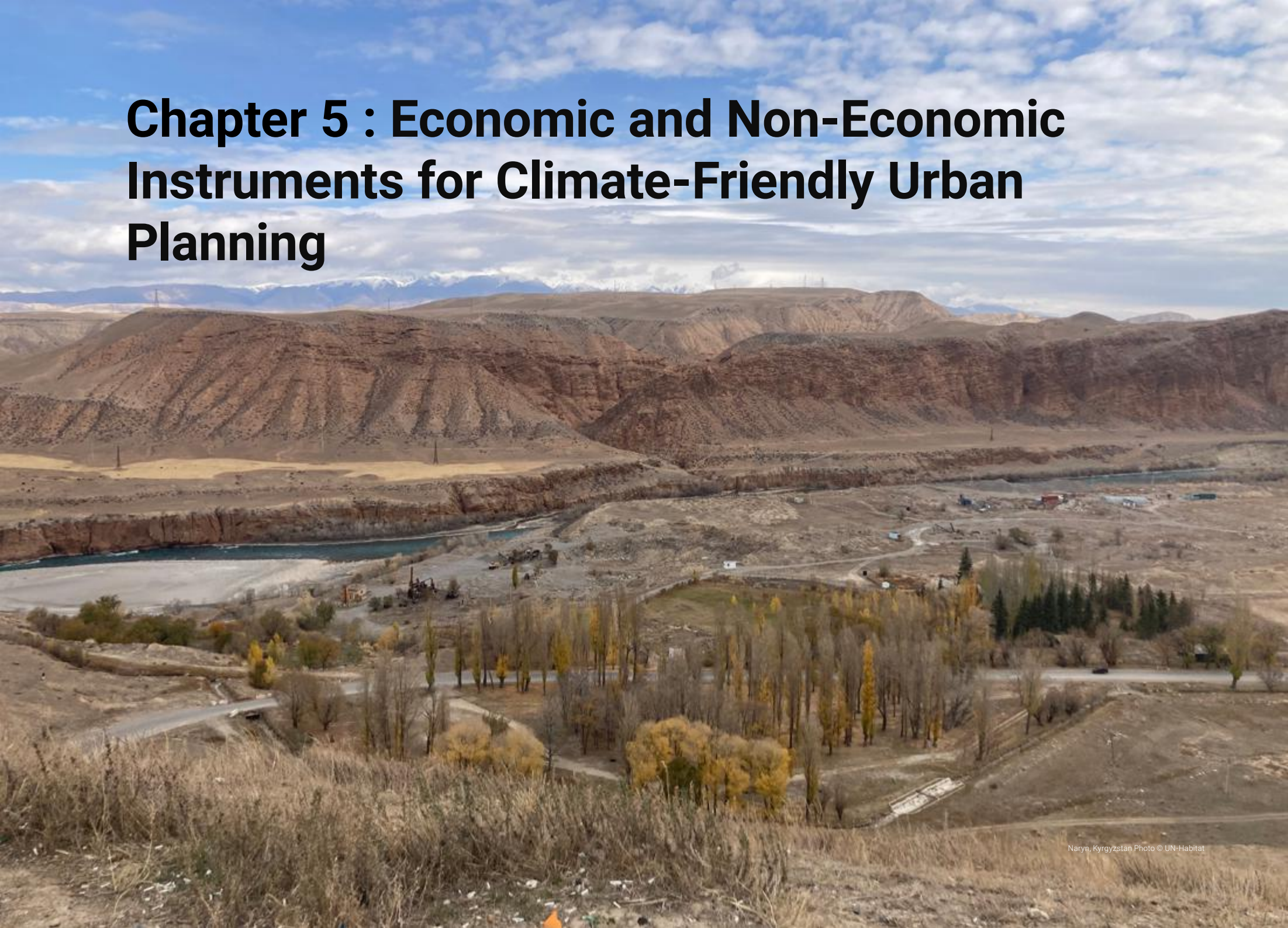
Therefore, by embracing the suggested range of block sizes and advocating for pedestrian-friendly design principles, Naryn can foster neighborhoods that are both more enjoyable to live in and environmentally sustainable. By minimizing setbacks, restricting street-facing parking, and defining plot coverage standards, Naryn can encourage the development of urban spaces that are safer, easier to access, and visually appealing. Additionally, by incorporating drainage solutions like swales and green roofs, Naryn can address the effects of climate change and enhance ecosystem services within its urban areas. Street orientation, choice of paving materials, and other energy-saving measures can also be optimized by planning authorities in Naryn to effectively reduce energy consumption and create more resilient urban environments.

Another crucial consideration is development control during the construction of new developments. To mitigate potential unconformity with planning standards and building codes that promote the mitigation of GHG emissions, it is vital to empower local authorities to conduct inspections at various stages of the construction process as well as following compliance approval to enforce adherence to local regulations. Through the proactive monitoring of construction activities, Naryn can maintain urban planning standards, increase transparency, and

encourage sustainable development practices. Additionally, developers should be mandated to incorporate energy-efficient measures into their construction projects. By incentivizing sustainable development practices, the local level can facilitate environmentally conscious urban growth and diminish its carbon footprint.



# Chapter 5 : Economic and Non-Economic Instruments for Climate-Friendly Urban Planning



## 5. Economic and Non-Economic Instruments for Climate-Friendly Urban Planning

The role of finance in enabling climate change action is widely acknowledged in various global agendas and international conferences. The 2015 Addis Ababa Action Agenda emphasizes that “funding from all sources, including public and private, bilateral and multilateral, as well as alternative sources of finance, will need to be stepped up for investments in many areas, including for low-carbon and climate-resilient development.”<sup>136</sup> Similarly, finance appears prominently in the Paris Agreement, where one of the key objectives is “making finance flows consistent with a pathway towards low GHGs and climate-resilient development.”<sup>137</sup> The New Urban Agenda also highlights climate financing by focusing on the need to “develop and expand financing instruments related to climate change action.”<sup>138</sup>

With respect to enhancing climate change adaptation and mitigation in urban areas, climate action requires local self-governments to be adequately financed to undertake their functions, meaning all the previously discussed climate adaptation and mitigation issues need local resources to be actualized. This chapter discusses financial resources for urban planning in climate change, including both Kyrgyz public finance and private investments, as well as incentives for adaptation, mitigation and sustainable land-use in urban planning.

### 5.1. Resources for Urban Planning and Climate Change

#### 5.1.1. Inter-Governmental Transfers

Inter-governmental fiscal transfers are transfers of funds from one level of government to another. Facilitating such transfers is one of the main ways of advancing local climate action, especially if transfers are linked to climate change-related objectives.<sup>139</sup> The 2016 Kyrgyz Budget Code<sup>140</sup> outlines two types of transfers to local budgets: redistributive transfers and targeted transfers. Redistributive transfers involve funds from the

republican (national) budget to bridge the financial gap between local income levels and budgetary needs. On the other hand, targeted transfers entail funds moving from one government level to another for specific purposes such as financing measures related to local issues, covering expenses when certain powers of state bodies are delegated to local self-governments, jointly financing expenditure obligations of the republican and local budgets, and contributing to the development of cities of regional significance. While the Kyrgyz framework broadly outlines possibilities for inter-governmental transfers, including targeted transfers, however it does not explicitly provide for inter-governmental transfers for funding climate change measures or environmental protection.

136. Addis Ababa Action Agenda of the third International Conference on Financing for Development, para 60.

137. Article 2.1(c) of the Paris Agreement (2015). [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

138. Paragraphs 118 and 1119 of the New Urban Agenda. (2016). <https://habitat3.org/wp-content/uploads/NUA-English.pdf>

139. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

140. Articles 53, 55 of the Budget Code of Kyrgyzstan. (2016). <https://cbd.minjust.gov.kg/111338?refid=1283684>



### 5.1.2.Mandate for Local Revenue Collection

To facilitate climate finance at the local level, legal frameworks should empower local authorities to generate revenue to fulfill their functions by, for example, imposing local taxes and fees including land-based taxes (property tax, infrastructure charges, land value capture, sale of serviced land, sale of development rights), non-land taxes (license fees for businesses, taxes on households, taxes on vehicles, etc.), and user charges (for services, planning applications and building permits, business registration, market fees), among others. In Kyrgyzstan, there are various national taxes, including income tax, profit tax, VAT, excise tax, taxes related to subsoil use, and sales tax. Additionally, the right to establish taxes belongs to the Supreme Council (Zhogorku Kenesh),<sup>141</sup> and local taxes, such as property tax, are further determined by the Tax Code and put into effect through normative legal acts of local keneshes (councils). Thus, local authorities can decide whether to introduce various types of local taxes and fees, as established by the Tax Code, within their jurisdiction. Additionally, they can set the rates for these taxes and fees as long as they comply with legislative limits. Nevertheless, local self-governments in Kyrgyzstan do not possess

powers to introduce new types of taxes and must act within the frameworks established by national legislation.

### 5.1.3.Authority Over Spending Decisions

Even when receiving funds from intergovernmental transfers and generating local revenue, local self-governments may lack sufficient discretion over how these funds are utilized, which can, in turn, limit local climate action to reduce emissions and undertake specific adaptation activities. For these reasons local governments should have the authority to make decisions on how to allocate the revenues under their control, barring certain circumstances such as when there are high levels of corruption in local governments. In Kyrgyzstan, the expenditure obligations of local self-governments are defined in Article 51 of the Budget Code, which stipulates that they are responsible for:

- handling local matters of significance as determined by the Kyrgyz legislation, specifically the Law “On Local State Administration and Local Self-Government Bodies.”
- supporting municipal enterprises, educational institutions, healthcare, recreation, culture,

social protection, housing and communal services, environmental protection, and defense.

- carrying out activities specified by the regulatory legal acts of local self-government bodies that are eligible for financing from the local budget. This includes operations related to issuing and repaying budgetary loans, implementing investment budgets involving capital investments and incentive (equity) grants, as well as issuing municipal securities.
- assuming tasks related to ensuring territorial defense and civil protection within their respective territories.<sup>142</sup>
- Thus, the list of expenditure obligations of local self-governments is fixed, leaving no room for these funds to be directed towards initiatives aimed at reducing emissions and energy consumption.

141. Article 18 of the Constitution of the Kyrgyz Republic. (2021). <https://cbd.minjust.gov.kg/112213/edition/1202952/ru>

142. Article 51 of the Budget Code of Kyrgyzstan. (2016). <https://cbd.minjust.gov.kg/111338?refid=1283684>

#### 5.1.4. Earmarked Resources

Allocating specific resources serves to safeguard climate change initiatives from being neglected during budget implementation. This strategy aims to guarantee focused funding for climate action, ensuring that the designated resources are genuinely utilized for climate change-related endeavors. Earmarking resources can take various forms, such as specifying a percentage in local budgets, introducing dedicated budget lines, or establishing distinct funds for climate change adaptation and mitigation. However, in Kyrgyzstan, due to the absence of regulation of climate change-related issues, there is an obligation to earmark resources in local budgets to cover expenses related to climate change adaptation and mitigation.

#### 5.1.5. Mobilization of Investment Capital

Effectively addressing climate change tends to go beyond what public finances can cover. Many countries face budget deficits, austerity measures, and competing socio-economic priorities. Climate change initiatives often involve high upfront costs and long-term commitments,

which can be challenging for governments, particularly in developing economies. To overcome this, regulatory frameworks should encourage the mobilization of investment capital in the form of municipal bonds, green bonds, tax increment financing, project bonds, and concessional loans. As of now, Kyrgyzstan is in the initial phases of developing a “green finance” market, as outlined in the following key strategic documents:

- The National Development Strategy of the Kyrgyz Republic for 2018-2040.
- The 2018 Concept of the “green” economy in the Kyrgyz Republic, titled “Kyrgyzstan – a country of the ‘green’ economy.”
- The Development Program of the “green” economy in the Kyrgyz Republic for 2019-2023, enforced in 2019.<sup>143</sup>

The latter document<sup>144</sup> discusses the introduction of new financial instruments, specifically “green” bonds, in Kyrgyzstan. Moreover, its implementation action plan encourages investment in environmental protection, human development, and clean technology and uses tax breaks and incentive mechanisms to finance the green economy. Thus, Kyrgyzstan is taking

initial steps towards developing green finance mechanisms for combatting climate change.

#### 5.1.6. Public Credit Guarantee

When providing credit to local governments, financial institutions, development banks, and other private sector investors seek to ascertain their capacity to repay the loans extended to them. To improve the credit-worthiness of local governments, the law can introduce public credit guarantees whereby the national government assures the loan by committing to assume payment responsibility if the borrowing local government is unable to meet its repayment obligations.

Under Article 65 of the Kyrgyz Budget Code,<sup>145</sup> local self-governments are entitled to borrow by issuing municipal securities on their behalf and attracting budget loans. This mechanism not only provides a safety net for financial institutions but also facilitates access to financing for local governments, promoting economic development at the grassroots level.

<sup>143</sup> Talant Omuraliev, ISR Consult, Ministry of Economy of Kyrgyzstan, UNDP. Research Summary: “Assessment of the Green Finance Market In The Kyrgyz Republic” Final Report. (2019). <https://www.undp.org/sites/g/files/zskgke326/files/2023-05/ОЦЕНКА%20РЫНКА%20ЗЕЛЕННЫХ%20ФИНАНСОВ%20В%20КЫРГЫЗСКОЙ%20РЕСПУБЛИКЕ.pdf>

<sup>144</sup> The Development Program of the “green” economy in the Kyrgyz Republic for 2019-2023. (2019). <https://mineconom.gov.kg/froala/uploads/file/6a0723b1ddbaf85fce34897e6654f6765710262.pdf>

<sup>145</sup> Budget Code of Kyrgyzstan. (2016).

### 5.1.7. Public-Private Partnerships

Public-private partnerships (PPPs) entail a cooperative contractual relationship between a government agency and a private-sector entity aimed at financing, constructing, and operating infrastructure projects such as transportation, housing, water, waste management, and energy infrastructure. The effectiveness of PPPs lies in achieving economic efficiency gains and alleviating the burden on the government by distributing responsibilities to the private sector. In Kyrgyzstan, PPPs are regulated under the Law “On Public-Private Partnership” (2021), which describes the following functions for PPPs:

- Enhancing the effectiveness and quality of infrastructure development and service provision.
- Streamlining government spending efficiency in designing, constructing, modernizing, operating, and maintaining infrastructure, along with delivering related services.
- Attracting investments to bolster the country’s economic growth.
- Engaging additional managerial expertise

from the private sector.

- Ensuring an optimal balance between the cost, quality, and intended purpose throughout the life cycle of assets in infrastructure projects.
- Leveraging innovations and the efficiency inherent in private sector practices. Fostering the growth and development of emerging technologies.<sup>146</sup>

Two years before the adoption of the law, in 2019, the Center for Public-Private Partnership was created under the National Investment Agency under the President of the Kyrgyz Republic.<sup>147</sup> The purpose of the center is the development of public-private partnership mechanisms and the promotion of PPP projects of state and municipal importance by attracting private investment and management experience from the private sector using PPP mechanisms.<sup>148</sup> Thus, there is an established legal framework for PPPs in Kyrgyzstan that can be used to finance green investments.

### 5.2. Incentives for Mitigation and Adaption in Urban Planning

Incentives for mitigation and adaptation in urban planning offer an important mechanism to encourage behavior and investments towards climate-friendly urbanization. They can be used to make urban planning more resilient and contribute to lower GHG concentrations. Examples of economic incentives are fee or tax waivers, direct grants, municipal property tax rate reductions, tax abatements for infill development, etc. Non-economic incentives, on the other hand, are provided by planning authorities to developers and private parties to compensate them for their losses or their endeavors to realize certain planning goals. These can consist of additional development rights, reduced planning requirements, reduced bureaucratic requirements, fast-tracking of the planning applications, and public investment in infrastructure required by the developer, etc.<sup>149</sup> However, there are currently no such mechanisms in the Kyrgyz legal framework for urban planning and development.

<sup>146</sup>. Law “On Public-Private Partnerships”. (2021). <https://cbd.minjust.gov.kg/112275?refId=1077389>

<sup>147</sup>. Regulation “On the creation of a state institution “Center for Public-Private Partnership” under the National Investment Agency under the President of the Kyrgyz Republic”. (2019). <https://cbd.minjust.gov.kg/14504?refId=1228984>

<sup>148</sup>. Regulation of the state institution “Center for Public-Private Partnership” under the National Investment Agency under the President of the Kyrgyz Republic. (2022). <https://cbd.minjust.gov.kg/159656?refId=1202494>

<sup>149</sup>. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

### 5.3. Incentives that Undermine Sustainable Urban Land Uses

#### 5.3.1. Economic Incentives for Unsustainable Urban Land Uses

Just as incentives can promote climate-friendly urban development, certain laws, policies and practices can also deliberately or inadvertently incentivize carbon-intensive development, climate vulnerabilities and limited climate adaptation measures. These measures include land and property tax exemptions that favor greenfield development, fossil fuel subsidies that incentivize urban sprawl and private car use, new developments in thinly populated and newly developing areas, mortgage finance regulation, and subsidies that direct jobs and industry away from cities' core areas, among others. In Kyrgyzstan, fossil fuel subsidies provide grants, loans, or subsidies to bolster the production of solid mineral fuels, coke, briquettes, or industrial gas.<sup>150</sup> These subsidies represent 17.4% of GDP, which is one of the highest levels in the region.<sup>151</sup> This indicates that the government is prioritizing a fossil fuel-dependent economy rather than promoting a transition to low-emission forms of

economic and physical development.

#### 5.3.2. Non-Economic Incentives for Unsustainable Urban Land Uses

Non-financial can also encourage unsustainable urban land uses and development practices. Examples include subsidized infrastructure benefitting sprawling and low-density developments, subsidies to particular types of transport infrastructure, and subsidized costs of providing public services such as water, energy, sanitation, private transport, parking, road pricing, etc. A prominent example of an unsustainable incentive is the provision of free, off-street parking spaces due to minimal parking requirements.<sup>152</sup> While Kyrgyz legislation<sup>153</sup> allows for free, off-street parking, it also limits the number of lots and the distance to certain establishments (e.g., residential houses, educational institutions, medical institutions, etc.), which prevents the development of sprawling and low-density cities. In sum, there are few non-financial incentives for unsustainable urban land use and development in Kyrgyzstan.

### Recommendations

**Enhancing inter-governmental transfers with the explicit climate, environmental and/or ecological dimension (5.1.1).** To enhance the effectiveness of climate action at the local level, it is advised to revise Kyrgyz law on inter-governmental fiscal transfers by requiring the earmarking of funds for climate-related purposes or by establishing a national climate fund from which local level transfers are made. This adjustment could also involve considering climate resilience and environmental impact as criteria for redistributive and targeted transfers, fostering financial support for local initiatives aimed at addressing ecological challenges, and promoting sustainable development.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Four out of seven participants find this recommendation applicable to the Kyrgyz context, while three participants indicate that it is outside their area of expertise. Thus, the recommendation has garnered a majority of support, but a portion of participants lack the relevant expertise to fully assess its relevance.

150. Line 70431 of the Budget classification of the Kyrgyz Republic. (2023). <https://cbd.minjust.gov.kg/200941/edition/1287038/ru>

151. Report on progress in achieving the Sustainable Development Goals in Kyrgyzstan. Review of strategies for integrating, accelerating and supporting policies to achieve progress on the Sustainable Development Goals. (2019). <https://www.gov.kg/storage/2020/02/media/npa/1941/5e3e619f02676.PDF>

152. Urban Planning Law for Climate Smart Cities: The Urban Law Module of the Law and Climate Change Toolkit. (2022). [https://unhabitat.org/sites/default/files/2022/10/final\\_urban\\_planning\\_law\\_for\\_climate\\_smart\\_cities.pdf](https://unhabitat.org/sites/default/files/2022/10/final_urban_planning_law_for_climate_smart_cities.pdf)

153. Table 8 of the SN KR 30-02:2020 "Composition, Order of Development, Agreement, and Approval of Urban Planning Documentation". (2021). <http://cbd.minjust.gov.kg/act/view/ru-ru/200606?cl=ru-ru>



**Empowering local authorities with the right to impose taxes (5.1.2).** To facilitate climate finance at the local level, it is recommended to consider amending Kyrgyz legislation to granting municipalities greater authority to impose diverse taxes that would contribute to their financial autonomy. The amendments should aim to enhance the capacity of local authorities to respond effectively to local needs and promote sustainable urban development. By wallowing municipalities more flexibility in determining tax mechanisms, the legal frameworks can better align with individual regions' unique circumstances and priorities. This adaptive approach can further facilitate climate finance initiatives and promote the overall well-being of local communities.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Three out of seven participants find this recommendation applicable to the Kyrgyz context, while three participants indicate that it is outside their area of expertise. Additionally, one participant from the national authorities notes that local authorities are empowered to impose taxes. Thus, while there is some support for the recommendation, a significant portion of participants either lack the relevant expertise or have specific observations regarding local taxation powers.

**Empowering local climate action by expanding regulatory flexibility in financial mechanisms (5.1.3).** Considering the importance of addressing climate change and promoting sustainable practices, it is recommended that Kyrgyz legislation be amended to provide local self-government bodies with greater flexibility in allocating funds for initiatives aimed at reducing emissions and energy consumption. This may involve revisiting the specific provisions outlined in Article 51 of the Budget Code that delineate expenditure obligations. To enhance the capacity of local self-governments to contribute to climate change mitigation and adaptation efforts, the amended legislation

should explicitly empower them to allocate resources towards environmentally sustainable projects, energy-efficient initiatives, and climate resilience activities. This adjustment would align with global sustainability goals and empower local authorities to play a more active role in addressing the challenges posed by climate change within their jurisdictions.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Three out of seven participants find this recommendation applicable to the Kyrgyz context, while the remaining participants indicate that it is outside their area of expertise. Thus, although there is some support for the recommendation, the majority of participants do not have the relevant expertise to evaluate its applicability.

**Introduce legislation for climate change resource allocation in local budgets (5.1.4).** To strengthen the country's commitment to climate change initiatives, it is recommended to amend legislation and introduce regulations specifically addressing the allocation of resources for climate-related measures in local budgets. The introduction of dedicated provisions mandating a certain percentage of local budgets to be allocated for climate change adaptation and mitigation efforts is essential

in this respect. Additionally, the establishment of distinct budget lines or funds specifically earmarked for climate-related expenses will provide transparency and accountability in resource utilization. This legislative amendment would not only underscore Kyrgyzstan's dedication to addressing climate challenges but also guarantee the effective and targeted use of resources for climate action within municipal jurisdictions. Furthermore, the introduction of targeted grants for local governments to incentivize action on climate change would foster a competitive and proactive spirit among municipalities in embracing and executing impactful climate projects.

**Strengthen and expand the regulatory frameworks for green financing (5.1.5).** Given the challenges associated with addressing climate change amidst public budget constraints, it is recommended to amend Kyrgyz legislation to further facilitate the availability of private financing for climate action.<sup>154</sup> In light of the need to mobilize investment capital, the country's regulatory environment should enable the issuance of municipal bonds, green bonds, tax increment financing, project bonds, and concessional loans. Building on the groundwork laid by strategic documents mentioned

in the respective subsection, legislative amendments should explicitly support the introduction and utilization of "green" bonds and other sustainable financial instruments.

This can be achieved by offering additional incentives, tax breaks, and mechanisms that encourage investment in environmental protection, human development, and clean technology. By fortifying these regulatory frameworks, Kyrgyzstan can further propel the development of its "green finance" market, fostering sustainable and resilient initiatives to combat climate change.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from the local authorities consider this recommendation applicable to the Kyrgyz context, while one participant views it as partially applicable. Four participants indicate that the issue is outside their area of expertise. Thus, while there is some support from local authorities, the majority of participants are not positioned to offer detailed feedback on the recommendation.

## **Enhance Kyrgyz legislation to incorporate economic and non-financial incentives for climate-friendly urbanization (5.2).**

Given the current absence of economic and non-financial incentives for climate-friendly urbanization in Kyrgyzstan, it is recommended to incorporate such mechanisms into existing legislation.

The legislative framework<sup>155</sup> should provide for economic incentives like fee or tax waivers, direct grants, municipal property tax rate reductions, and tax abatements specifically tailored to encourage climate-resilient urban planning practices. Likewise, non-economic incentives should be introduced to compensate developers and private parties for their efforts in aligning with climate-friendly planning goals.

These may include additional development rights, reduced planning requirements, streamlined administrative processes, fast-tracking of planning applications, and facilitating public investment in essential infrastructure. Additionally, the legislative amendments should address the insufficient development of climate change-related frameworks, linking adaptation and mitigation measures to financial support for existing initiatives. By integrating these

<sup>154</sup>. Please note that this specific topic is in the process of development (please refer to subsection 5.1.5); thus, it is up to local experts to determine the appropriate legal framework.

<sup>155</sup>. Please note that because current Kyrgyz legislation does not address this specific topic, it is up to local experts to determine which existing law should cover it or whether a new legal document needs to be developed.

mechanisms into Kyrgyz legislation, the country can foster a climate-responsive urban planning framework, encouraging both behavior and investments that contribute to resilient and low-carbon urbanization.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from the local authorities consider this recommendation applicable to the Kyrgyz context, while one participant believes it is not applicable. Four participants indicate that the question is outside their area of expertise. Thus, there is a mixed response with the majority of participants unable to provide a definitive assessment.

**Amend Kyrgyz legislation to restructure fossil fuel subsidies and encourage climate-friendly practices (5.3.1).** Given the concerns raised about the impact of fossil fuel subsidies on environmental sustainability in Kyrgyzstan, it is recommended that Kyrgyz legislation be amended to reevaluate and restructure existing subsidy mechanisms. Specifically, the focus of subsidies should be shifted from supporting the production of solid mineral fuels, coke, briquettes, or industrial gas, to supporting the production and use of low-emission energy

sources.

This will contribute to fostering a more sustainable and equitable development trajectory in Kyrgyzstan, ensuring that economic practices align with climate objectives and promote resilience to climate change effects.

**Feedback from the participants of the workshop held on June 14<sup>th</sup>, 2024:** Two participants from the local authorities consider this recommendation applicable to the Kyrgyz context, while one participant finds it not applicable. Four participants indicate that the question is outside their area of expertise. Thus, the recommendation has received limited support and a significant portion of participants are unable to assess its relevance.

### **Naryn Town: Recommendations on Economic and Non-Economic Instruments for Climate-Friendly Urban Planning**

The recommendations under Chapter 5 are very much oriented to the local level and apply specifically to the context of Naryn. While all the defined recommendations should be implemented at the national level, it is essential to recognize their direct relevance and impact at the local level, particularly in a town like Naryn. Thus, empowering local authorities with the right to impose taxes will enhance their financial autonomy and enable them to fund sustainable projects aligned with local needs. Moreover, expanding regulatory flexibility in financial mechanisms will allow Naryn to allocate funds more effectively for initiatives aimed at, for example, reducing emissions and energy consumption. Also, once climate change perspectives are integrated into Kyrgyz national legislation (recommendations under Chapters 2-4), it will be valuable to introduce regulations specifically addressing the allocation of resources for climate-related endeavors in local budgets. This will ensure the effective and targeted use of such resources.

Furthermore, strengthening and expanding regulatory frameworks for green financing can

mobilize investment capital for sustainable initiatives on the local level. By offering economic and non-financial incentives for climate-friendly urbanization, Naryn can encourage investments and behaviors contributing to resilient, low-carbon urban development. Finally, restructuring fossil fuel subsidies to instead encourage climate-friendly energy sources will support Naryn's transition towards a more sustainable and equitable development trajectory. These measures collectively can empower Naryn to take significant strides towards a greener and more resilient future.

## Conclusions

The analysis of Kyrgyz legislation through the lens of the UN-Habitat Urban Law Module of the Law and Climate Change Toolkit has unveiled both commendable strides and notable gaps in addressing the intricate intersection of urban planning and climate action. Kyrgyzstan's unique topographical features, characterized by its mountainous terrain and susceptibility to climate change, underscore the urgency for a comprehensive legal framework that can effectively navigate the challenges posed by evolving climate patterns.

This assessment has found that 29.2% of the Kyrgyz legal framework examined fully aligns with the provisions of the Urban Law Module of the LCCTK. This score indicates that there is a foundational understanding and integration of crucial climate change components into Kyrgyz urban law. This initial alignment is promising, as it reflects the country's recognition of the importance of aligning urban planning with climate action imperatives. However, the significant gap in alignment (44.2%) highlights the imperative for extensive legislative adjustments to bridge disparities and fortify Kyrgyzstan's legal infrastructure surrounding climate change and urban planning.

Moreover, it was found that 24.7% of the issues in the LCCTK receive partial coverage in the Kyrgyz legal framework, which signifies a positive trajectory in addressing specific aspects related to urban planning and climate change. While this progress is encouraging, it serves as a call to action, emphasizing the need for sustained efforts and enhancements to ensure a more comprehensive and robust legal framework. The 1.76% of provisions deemed inapplicable within the Kyrgyz context points to the necessity of tailoring climate-responsive urban planning practices to the unique circumstances of the

country. Understanding the applicability of certain provisions within the local context is crucial for crafting effective and context-specific legislation.<sup>156</sup>

In moving forward, targeted efforts and amendments are imperative to address the identified gaps and optimize the legal framework for urban planning in the context of climate change. The recommendations derived from each section of the report offer actionable insights, guiding the refinement and enhancement of Kyrgyz legislation. By leveraging these insights, Kyrgyzstan can develop a legal foundation that not only meets the standards outlined in the toolkit, but also advances sustainable urban development practices, contributing to the broader discourse on resilience and sustainability in the country's urban development landscape.

This comprehensive analysis builds upon the groundwork laid by the UN-Habitat in the Naryn Town Profile, fostering an ongoing discourse on building resilience and sustainability in Kyrgyzstan. The aspiration is that these findings contribute meaningfully to the ongoing efforts to navigate the complexities of climate change and foster a resilient and sustainable urban future for Kyrgyzstan.

<sup>156</sup> See the Annex below for the breakdown of the Kyrgyz legal framework's alignment with the LCCTK.



## Annex. Breakdown of the Kyrgyz Legal Framework's Alignment with the LCCTK:

UN-Habitat Urban Law Module of the Law and Climate Change Toolkit (Indicators)	Kyrgyzstan's policy, legal and institutional climate change analysis (current framework)
1.1.1	x
1.1.2	50/50
1.1.3	N/A
1.1.4	x
1.1.5	x
1.2.1	✓
1.2.2	50/50
1.2.3	x'
1.2.4	✓
1.2.5	50/50
1.3	50/50
1.4.1	x
1.4.2	✓
1.4.3	50/50

2.1.1	✓
2.1.2	✓
2.1.3	x
2.1.4	x
2.1.5	50/50
2.2.1	✓
2.2.2	x
2.2.3	✓
2.2.4	x
2.2.5	✓
2.3.1	✓
2.3.2	50/50
2.3.3	✓
2.3.4	✓
2.3.5	✓
2.3.6	✓
3.1.1	50/50
3.1.2	50/50
3.1.3	x
3.1.4	50/50
3.1.5	50/50
3.1.6	x
3.1.7	50/50
3.1.8	x
3.1.9	50/50
3.2.1	x
3.2.2	x
3.2.3	x

3.2.4	x
3.2.5	x
3.2.6	x
3.2.7	x
3.3.1	✓
3.3.2	50/50
3.3.3	✓
3.3.4	✓
3.3.5	✓
3.3.6	50/50
3.3.7	x
3.3.8	x
3.3.9	50/50
3.3.10	x
3.4.1	x
3.4.2	x
3.4.3	x
3.4.4	x
3.4.5	x
3.4.6	x
3.5.1	50/50
3.5.2	✓
3.5.3	x
3.5.4	✓
3.6.1	x
3.6.2	x
3.6.3	✓
3.6.4	50/50

3.6.5	✓
3.6.6	50/50
3.6.7	✓
3.7.1	50/50
3.7.2	✓
3.7.3	x
3.7.4	x
4.1.1	x
4.1.2	50/50
4.1.3	x
4.1.4	x
4.1.5	50/50
4.1.6	x
4.1.7	x
4.2.1	N/A
4.2.2	✓
4.2.3	x
4.2.4	50/50
4.2.5	✓
4.2.6	✓
4.3.1	✓
4.3.2	50/50
4.3.3	50/50
4.4.1	x
4.4.2	x
4.4.3	✓
4.5.1	50/50
4.5.2	x

4.5.3	x
4.5.4	x
5.1.1	✓
5.1.2	✓
5.1.3	50/50
5.1.4	x
5.1.5	50/50
5.1.6	✓
5.1.7	✓
5.2.1	x
5.2.2	x
5.2.3	x
5.2.4	x
5.3.1	x
5.3.2	✓